DR. M. RICARDO,

CARACAS, VENEZUELA.

ITEMS OF INTEREST.

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Thoughts from the Profession.

AMALGAM INCIDENTS, No. 3.

DR. J. W. CLOWES, NEW YORK.

IT WAS NOT AN ACCIDENT.

Not long ago a worthy member of the dental profession, much given to traveling and service rendering in many climes, called early at my office to have a tooth filled. He had just arrived from Caracas, and was outward bound again in a few days. I bade him take the chair at once, that I might be able to do his work before my regular patients of the day arrived. I inquired what tooth was to be filled, and he placed the ball of a forefinger directly on and covering the crownless roots of a middle molar, left side, lower jaw. I observed, "that is a big case, but I shall try to be equal to the task imposed," and went on with the work of excavating, cleansing and disinfecting the dental hulk. When I had been thus engaged for a full hour, and had the nerve channels ready for the reception of necessary screws, my patient informed me that when I finished the filling he would like me to "extract those old roots." "What old roots?" I asked. "Why, the ones in front of the tooth on which you have been working," was his answer. "My dear sir," I said, "I have been working on those old roots ever since you sat in my chair." "Oh," he replied, "I did not want anything done to them; they are no good, and I gave them up long ago. They have caused me trouble for many years, and I resolved to get rid of them to-day." Astounded beyond measure, I said: "I asked you what tooth you desired filled, and you instantly covered those roots with your finger. You ought to have known what you were about." But he still replied: "I did not mean to have you do anything for them." "Well," I said, "it is very singular that this

has happened, and as you do not appear to approve of my going on with the work, I propose to continue for the love of it." "Ah," he exclaimed, "I fear it will be *love's labor lost.*" Thus I stood face to face with an apparent mystery. I could not look on what had occurred as an accident, but felt that some time and in some way there would be an intelligent solution. Having "put my hand to the plough," though the furrows were rough and the temptation to desert was strong, I did not look back. On those crownless roots, in strength and fullness, arose a well-developed, all-amalgam tooth, which, by its presence, soon came to be a power in mastication. The patient, for two or three days after my labor of love, appeared like one who felt himself aggrieved, but gradually a happier look prevailed, and at his departure all signs of resentment were gone. Six months later a letter came to me from Hamilton, Bermuda, and a portion of its contents read as follows: "I have had much comfort from the tooth you built up for me; the highest comfort one can have from any organ, viz., to do its work and not grumble. I have on hand now two mouths to put in order, with from ten to fifteen ulcerated teeth in each. How I should enjoy putting them in your hands and looking on as an assistant. I really think it too bad that you have not trained up some one on whom to throw the mantle of Elijah. Without flattery, I really think that your faith and your works are something phenomenal, amidst a faithless and unbelieving generation." Thus the interpretation of the mystery appeared. My little act of faithful service had established an able missionary in the field of dental science, and my reward had come. Who can estimate the possibilities of growth and advancement that have thus been set in motion? An intelligent mind had grasped a great truth, and on the continents and amid the isles of the sea is earnest and busy in its dissemination.

THE TRAVELING SALESMAN IN SOUTH AMERICA.

There is probably no business that tests more sharply all the virtues of man, than that of traveling salesman for a dental manufacturing company, especially in a foreign country where the successful introduction of such a company depends on the personal conversion of nearly every individual dentist in the cities visited. The nature of the dentist's work requires close confinement indoors, and many hours in strained and unnatural positions; breathing in fetid atmospheres of carbonic acid gas dashed with sulphuretted hydrogen; contending with exaggerated fears, and saliva

overflows; guarding constantly against sudden violent contortions from pain spasms, and a hundred other ills that the profession is heir to. These all tend to make the chronic disposition of the average dentist one of irritability and nervous impatience, and the dental salesman must be fortified against them all.

Then, again, dentists are very much "set in their ways;" that term expresses it better than any other I can think of. Each has his (and I must likewise say *her*) own particular method of treatment, of operating, of mechanics, which is always the *best* method of course, and he does not begrudge hours of precious time in dwelling on the wonderful results he has accomplished by the special methods during his entire professional career. He does not hesitate a moment in telling you that there is only one good amalgam, or alloy, or gold, or oxyphosphate. They are the only ones he ever uses. He has used them constantly during the past ten, twenty, or thirty years, and he therefore *knows* it.

"Have you ever used Dawson's White Alloy, or Welch's Alloy, or 'Superior' Amalgam, or 'Champion' Foil, or 'Mineral' Cement?"

"No."

"Know anything about them?"

"No."

"Would you make a trial of them with the compliments of The Wilmington Company?"

"Oh! It isn't worth the while."

"But if a chromo, or match safe, or tilting ice-pitcher were thrown in gratis also?"

"Well, I might try them."

Then I am initiated into the secrets of a large number of valuable inventions that he is just about finishing. They orignated in his brain twenty-two years ago, and are gradually taking shape. There is a fortune in each. Perhaps The Wilmington Company might like to buy them, or manufacture them on a royalty; in any event I am sworn to eternal secrecy in the invention. I distinctly remember an instance of this in Chile, last year, when I was offered a half interest in a new dental engine, or at least in the *idea* of one, which is the most valuable point after all, something that would revolutionize the entire system, and supplant every other kind in use. I was forced to prove myself worthy of the great confidence thus reposed in me, after which it was explained, in husky whisperings, to consist of a music box nailed to the bottom of the bracket table, and a flexible arm attached to a combination of wheels that in turn were driven by the music cylinder. I

admitted a charm in the idea for the very refinement of its cruelty, in adding to the pain of the drill point that of "Sweet Violets" and "White Wings."

I ask for an appointment when I can bring in my samples and have them considered. The word "appointment" suggests a thought to him, and I am shown, with pride, his appointment book and the large number of future engagements contained therein; and then the account book is produced, and an exceptionally high charge is pointed out here and there through its numerous pages. And then "the class of patients I have, only the *crême de la crême;*" and a large number of unpronounceable names are read off, none of which I know. I look at my watch. "Oh don't hurry, my patient has failed me this morning and I have an hour yet unoccupied; tell me what are the newest fads in the States?" I mention bridge-work, yield up my scant knowledge of implantation. "Implantation! that reminds me, twenty years ago a little girl came to my office with the blood running from her mouth and her tooth in her hand, I ——"

"Pardon me, doctor, but when I have a little more leisure, I will drop in and ——."

"Only a moment, only a moment; I washed out the socket with diluted carbolic acid, pressed the tooth firmly into place ——." I heard no more, my next remembrance being the doctor holding salts to my nostrils and a servant bathing my head with water. "You are all right now, sir; I see you are not acclimated yet; new in the country. Don't eat much fruit; be careful of liquor, and whenever you are going by, drop in and have a chat with me, I enjoy it with one who can understand and appreciate. Yes, send around some samples of that amalgam and gold for a trial. Next time you come to South America, I'll buy some if they prove good. Good-day."

Such are a few—and only *a few*—of the trials of the traveling dental salesman everywhere, and especially abroad, though in foreign countries they are frequently flavored with bitters peculiar to the locality.

I recall the first day I started out on my professional visits, last month, in the city of Caracas, Venezuela.

Making up my list from directories and inquiries, I engaged a coach and started forth. As names are arranged alphabetically in directories, and it is admitted that there is nothing in a name to indicate its ownership, I found that high-sounding ones at the head of the list often proved the reverse professionally. In the present instance, my journey to the first address seemed endless. We

wound through alleys, down into gulches over stretches of waste, dump land, yet keeping within the city boundaries. We finally halted. I looked out at a small adobe hut with one story, one window and one door; a little tin sign on the door read: "*Cirujano, Dentista.*" I could get no response to my knocks, so entered, without ceremony, into a black hole of a hallway, with a door at the left through which I passed into a room some 6x10 in size with an ordinary chair in front of the small grated window; two or three pairs of forceps on a box, some old yellow prints from a Spanish illustrated paper pasted on the walls, and a large naked negro standing in a tub of water in the center of the room, bathing, was the dentist.

The Spanish race and their off-shoots are *never* discomfited or embarrassed, and *always* polite. He was a pure blooded "Jamaica Nigger," having passed the greater part of his life in Venezuela, and stepping from the tub apologized for the modesty (?) of his attire, gave me a huge web hand to shake, and placed himself eternally at the commands of The Wilmington Dental M'f'g Company.

Later in the day I called at a very finely equipped dental office, all appliances being of the most modern type, and a plentiful supply; but the rooms seemed close, dark, and "stuffy"—as Gilbert puts it—and there was a very strong odor of carbolic acid, greater than usual in a dental office. There was a narrow bed in a corner of the small dirty laboratory, on the edge of which I sat while talking to the proprietor who was paring a cast at the bench. "I've only had this place a week," he explained. "I bought it at auction. It has always had the best practice in the city, but Dr.—— (the former owner) died two weeks ago of yellow fever, and so I came in and took the old stand. He was only sick one day, died a terrible death on that bed where you are sitting. They laid him out on this work-bench, and three hours after death he was buried. That smell you notice was the effort of the authorities to fumigate and disinfect the place." The mattress of the bed was not a spring one, but I reached the door with the same facility as if it *had* been.

The day closed with one more incident with which I will, likewise, close this letter. Having introduced myself to a very reputable dentist, we were chatting, when a big half-breed Indian entered and wished a tooth extracted. The doctor seated him, examined the tooth, and then turning to me, invited me to perform the operation, at the same time explaining to the patient with much arm flourishing, that I was a professor of dentistry, just arrived from all the colleges in the United States, that I was pre-eminent in that line, in reality stood at the head of the profession, being a founder

of dental institutes, writer of dental text-books, etc., etc. To all of this I bowed, and smiled, and *declined*, but it was useless. The tooth was a second molar, and so gigantic that I longed to possess it for some dental museum. I called the doctor aside and explained to him how it was bad policy to turn one's patients over to others, especially to strangers, but it would not do. I had just recovered from a severe attack of fever and was quite weak. The perspiration that I had striven so hard to bring out fever days now jumped forth from every pore; I felt that the reputation of my country, of the company I represented, and of my own personality depended on success, and having secured a hold, I could hear my toe nails scratch along the inner soles of my shoes vainly seeking for a purchase point, as I closed my eyes and, like Sampson striving at the temple's pillars, bent forward to the work. I always shall believe an earthquake took place during that operation, there was such a swaying and upheaving of earth and sky, and flashes of light across my closed vision; the patient likewise endorsed my belief, but I have been unable to secure further evidence of it. At last something came, I was afraid to open my eyes for the truth, fearing I would find a partial upper maxillary with an eye and ear attached dangling from the forceps, but I had been successful. The tooth was enormous. When the beaks closed over the crown it threw the handles so far apart that I could not entirely grasp them both, but kept slipping backward and forth from one to the other. I have seen that tooth reproduced in some great oak tree that had been torn from the earth by a cyclone, and lay with its mighty naked roots extended into the air like branches. No less heroic comparison would do it justice. I wanted the trophy, so did the dentist, and likewise the patient to whose wish we both deferred, though I am not clear in my mind as to the ownership of an extracted tooth. In whom is the legal title? Have I a right to the limb that the surgeon amputates, or the hair that the barber shears away? If so, I may yet recover that tooth.

These lines are penned on board of a Chilian passenger steamer of three thousand tons register, and fifteen-knot speed, which will be quickly transformed into a cruiser in the event of war with the United States. We touched at a Peruvian port yesterday, and received telegraphic news of a *positive* demand on Chile made by the United States of a large payment in money and a salute to the flag. This threw the officers of the ship into a frenzy, and with clinched fists they wanted to know of me if I thought Chile would ever so humiliate herself as to comply. *Never*. I demurred and gracefully retired to a more lonesome part of the

ship. If the United States retreats one step from the position she has now taken, the arrogance of Chile will leap all bounds.

R. W. E.

On board steamship "Mapocho." Latitude, 10 S. Longitude, 80 W. January 29th, 1892.

ARSENIC AND THE DENTAL PULP.

It is a common and generally accepted theory, that death of the dental pulp from the application of arsenic results from strangulation: This is the teaching—first, irritation, then inflammation, to be followed by strangulation and death.

That all these processes occur, and in the order named, is questionable. Leaving out strangulation, we can very readily conceive how the others may and do take place, as is often verified in daily practice. Yet, in many cases, death ensues without either one being manifested. Irritation in the dental pulp usually produces a sense of uneasiness and discomfort, and when inflammation takes place, pain with variable severity is experienced.

In the application of arsenic, when rightly applied, neither of these are manifested in the least degree; at all events, not so far as to produce pain; and yet death of the pulp follows swiftly and surely.

If death depends on one or both of these, then it must follow that where they do not take place, it will not occur. Facts do not support this assertion. How often we hear the caution reiterated: "Never apply arsenic to an inflamed dental pulp; first reduce the inflammation, and then make the application." In other words, we are to subdue a condition that already exists, and then, according to the accepted teachings, reproduce that very condition by the application of a poison, for the purpose of destroying vitality.

Is this good teaching, or even sound theory? Certainly not. If the doctrine holds good that inflammation produces strangulation, and this is followed by devitalization, why not produce an increase of it where it already exists, and thus reach the end sought at once, and without any palliative treatment?

Here comes in the theory "that an inflamed pulp will not absorb arsenic." If it absorbs it at all, why should an increased flow of blood, as must exist in inflammation, prevent the absorption, and in what way does it prevent it? These are logical questions that follow; who can answer them? Is it not a far more logical conclusion to say that absorption of this drug does not take place at

all? That it does not do its work in this way—that is by entering the circulation—but in some other, as yet unexplained? *

In proof that it is not by strangulation, at least, comes the evidence that the portion of the pulp the farthest from the apex, is the part that first perishes and becomes dead to sensation, whereas the portion the nearest the apex, is the part that the longest retains vitality, and is often highly sensitive long after the part that is the farthest away, and has been in actual contact with the poison, is even dead and decomposed, or partially so.

That arsenic will destroy the dental pulp is a well-established fact; but that it does so by the process so commonly taught, and so widely believed, is an unsettled question, and needs to be solved. Until it is, and so settled that it can be demonstrated, the methods of its application will continue to vary, and the results following such application be numerous, and often unsatisfactory. In the light of scientific truth, definite results should always follow a given course of treatment. That it does not, only proves that *unscientific* methods are followed, and this for want of proper knowledge as to the conditions to be met, and the right course to be pursued. So long as mystery hangs over or about any process that is to be carried out, so long will mistakes occur, definite ends fail to be reached, and blunders be made. When we can say we *know* how arsenic destroys living tissue, we may be able to take the next intelligent step and control the pain and discomfort, not to say danger and injury, that are now so often sequences of its use.

Until it can be definitely proved *just how* devitalization is caused, as in cases where we use it for pulp destruction, let us cease to teach or even *assume* that it is by strangulation, for the facts in the case will not warrant such teaching, nor will demonstration prove it. *W. H. H. Barker, Miller, So. Dak.*

There is room, apparently, for a few dentists at Kula (India). A correspondent of a daily paper, says that the surgeon dentists there are the village blacksmiths, and their forceps are tongs two feet long. The difficulty with these instruments is to get them into the sufferer's mouth, and then to get them out again.

—*British Journal.*

[* The assumption that in inflammation there is an increased flow of blood, is incorrect. There is a decreased flow, a clogging, a retention of the blood. This is what produces the swelling, and the pressure of this swelling against the nerves produces the pain.—ED. ITEMS.]

LABORATORY HINTS.

WORKING PINK RUBBER.

Packing.—Have a copper dish, about five inches in diameter, and of same depth, with a flat burnished copper cover. After removing the base plate, and all large pieces of wax from the flask, place the part containing the teeth in the copper boiler, and cover with boiling water; set it on the kerosene stove, and thoroughly wash out all wax with an old syringe; let stand in the boiling water while cutting the rubber for the gums. The rubber should be cut in small squares, of about one-eighth and one-fourth inches; also, cut two long strips, wide enough to reach from just above the pins to a little above the top of the plaster, and of sufficient length to extend clear around the rim; place the pieces, as cut, on the boiler cover. The flask being now well heated through, remove from the boiler to the bench; put something under the heel to raise it a half or three-fourths of an inch. Place the boiler containing the hot water on the bench beside the flask, and put the cover (with the cut rubber) on the boiler. Use a pointed excavator in the left hand, and a small rubber packer in the right; pick up the pieces with the excavator and force into place with the packer.

The first piece of rubber is placed between the centrals, and packed well down between the teeth; continue around, from tooth to tooth, till the molars are packed; then, begin back and work to the molars on the other side. In packing, use the smallest pieces of rubber down between the teeth, building in the larger pieces last. Next, pack the wide bands; letting them extend entirely around the rim; the lower edge being just above the pins, the upper reaching a little above the plaster. Now, pack in the plate rubber, being careful, if any surplus is put in, to pack it in the deepest part of the arch. If these directions are carefully followed, there will be no difficulty in packing, and no red cropping out on the gums of the finished plate.

Vulcanizing.—Pink rubber should not be overheated, either in warming to pack, closing the flask, or vulcanizing. It causes it to be brittle, makes it darker, and gives it a dead appearance, that no amount of bleaching will remove. Pink rubber, in fact, all rubbers, are tougher, have a better color, and take a better finish, when vulcanized in dry steam.

Any ordinary vulcanizer can be converted into a dry steam machine, as follows: Have a tinsmith make, from heavy sheet zinc, a basin-shaped dish, about the depth of a flask, and a fourth of an inch smaller in diameter than the inside of the boiler. Have

the bottom perforated all over for the escape of steam. When getting ready to vulcanize, put this cup in the vulcanizer, bottom up; set the flask on it, and put in just water enough to reach half-way up the cup. By this method, we have a dry steam vulcanizer that does the work as well as many of the high-priced ones. Another point that is important: We should get used to vulcanizing and working one kind of pink rubber, and we will have better success, than by changing around, as every make has its peculiarities. I have tried many kinds, and have finally settled down to two makes —the S. S. White pink, and the Welch pink—either of which will give good satisfaction, if properly worked. It is almost impossible to do correct vulcanizing with a thermometer. Every vulcanizer should have a good reliable steam gauge for governing the temperature. Vulcanizing cannot be done by guess work. Ascertain the time and temperature that gives the best results with the rubber you are working, and adhere to it in every case.

Finishing.—In using pink rubber for gums, it is quite a difficult task to properly finish close around, and down between the teeth; especially, when the case has been roughly waxed up. This work can be all saved, if the wax model is carefully shaped just as the finished gums are desired. Now, take a piece of tin foil (such as is sold in the depots for covering casts), and burnish it over the face of the wax. This should be carefully done; letting it extend well up to the top of the rim, then, bent out at right angles, to form a flange. The lower edge should be worked down neatly between the teeth, and made to fit close. Do not displace the foil in washing out the wax, or in packing. When a plate, thus treated, is removed from the flask, it will only be necessary to use a fine file, to shape and round up the top of the rim, and a graver to go around the tops of the teeth, to round up the gum margins. Put a composition cone on the lathe head, with pumice and water; smooth out all file marks. Now, put on a soft brush wheel in place of the cone; keep the gums and wheel wet with a thin mixture of whiting, water, and glycerin; run the brush at a high speed to give the final polish. To make the glycerin mixture, add fourth ounce glycerin to three and a half ounces of water; use this to wet up the whiting.

Palatine Surface of Plates.—Much labor in finishing can be saved, if care is used in fitting the case up. In putting on the base plate, do not make it too hot, and then press it out of all shape. Warm it just enough to work; put it on the cast, and fit down carefully into the depressions, rounding up over the ruga, bringing out their natural shape, and retaining the original thickness of the base plate. To do this, it is often necessary to use a rubber packer, or

burnisher. In waxing up to the teeth, use only enough material to cover the pins. Smooth the plate up neatly, then burnish on tin foil, as described for the gums, letting it extend up on the teeth a little. Remove from the flask, dry, and finish, as described for the gums. *Dr. Wm. H. Steele, Forest City, Iowa.*

A LEGAL OUTRAGE.

Laws are usually passed for the protection of communities and individuals, and in order that equal justice may be administered, courts have been established. This, theoretically, is the basis of all law; but, unfortunately, this beneficent idea often fails through various causes, not the least of which may be found in the officious intermeddling of individuals and societies. This truism has been made clearly apparent in the effort to enforce the dental enactments of the various States. In some, societies have been modeled after the "Law and Order Association." The motive for the origin of these has, doubtless, been of the most unselfish character, but history is full of examples of such bodies finally becoming odious from their tyrannical proceedings.

Our attention was recently called to a case occurring in Philadelphia which illustrates this view. There a society has been organized the sole object of which is the prosecution of violators of the dental law of Pennsylvania. Now, this law is one of the most satisfactory in the statute books of the various States, and if left to its natural developement it would prove of greater value in the future than it has in the past, valuable as that has been.

The progressive steps taken by the organization alluded to has finally led, very naturally, to overstepping the bounds laid out for its government, and, if continued, will certainly bring the whole question of dental law into contempt.

The law requires, very properly, that all practitioners should be registered; but there has been a good deal of misunderstanding in regard to this, and many mistakes have been made by individuals without any intention of violating any of its provisions. This is especially true of recent graduates.

The special case that calls for notice is that of a young practitioner of Philadelphia. This gentleman, by his scientific work, has made for himself an enviable reputation both at home and abroad. Possibly for this reason he was selected as a shining mark for this ill-advised action. Without previous notice, a warrant was issued,

and the officer of the law waited on him while engaged in his professional duties. The officer insisted on serving the warrant at once, and it required argument and persuasion to prevent him from dragging the dentist through the streets of the city as a common criminal. Indeed, had this minion of the law performed his duty, such would have been the result. The matter will be settled in the courts, and we can there safely leave it.

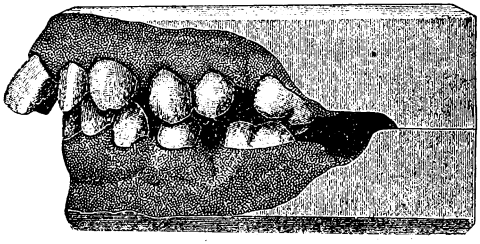
What, however, is to be thought of men who openly violate in this manner, under the guise of public duty, all professional practice? It seems to us that the societies to which they may belong have a duty to perform, and if they have any proper self-respect they will promptly place such individuals beyond the pale of professional recognition. They can have nothing in common with those who appreciate professional ethics or gentlemanly procedures.

—*Ed. in International.*

[The young practitioner here referred to is one of the most skilful of the State, and in every way dignified and orderly.—ED. ITEMS.]

WHAT SHALL I DO?

EDITOR ITEMS:—Thinking I have a patient that is of interest to the readers of the ITEMS, and hoping to receive some suggestions as to what to do, I send you a model of the mouth of a girl thirteen years of age.

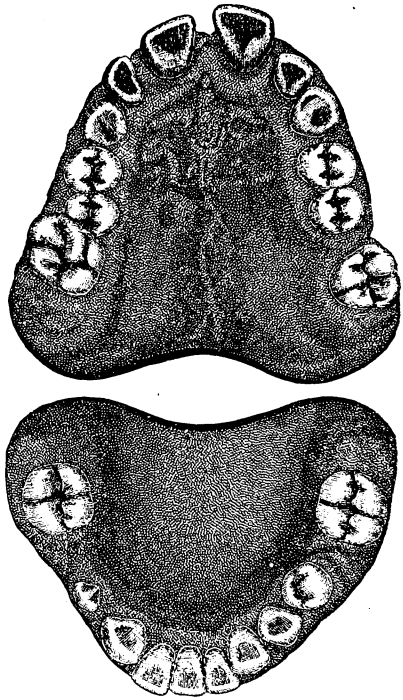


She is one of a family of eight children, two older and five younger.

The oldest, a young lady of eighteen years, has been wearing a full upper and lower set of artificial teeth for the past year. Says her teeth, with the exception of two or three, dropped out.

Another sister, eight years old, is troubled the same way, while the boys, sixteen and eleven, with the exception of a little irregularity, have good teeth. The others are too young to have trouble of that nature.

The father and mother were never troubled with their teeth in that manner.



In this case the alveolar process seems to have wasted almost entirely away from the right lower lateral, decreasing in extent toward the left of the other incisors.

The superior centrals are affected, the left more than the right; also, the right superior molar and the left inferior molar, the latter still discharging pus from around the necks.

I was careful to remove every particle of calculus; also, in removing a portion of carious bone, surrounding the left lower lateral. She appears to have lost three of her sixth-year molars.

For treatment I have used dilute sulphuric acid, permanganate of potassa (gr. ij to aqua ℥j), sulphate of zinc, and oil of cinnamon.

Ligating is a failure on account of the shortness of the cuspids and bicuspids; and a swaged plate is a failure for securing the teeth.

I have been treating the girl for four months, with no more success than a healthy color restored to the gums. Using listerine as a mouth wash, and for internal treatment her physician prescribed cod-liver oil, with hypophosphates of lime and soda, quinine and iron.

What advise can you offer?

C. O. Carr, D.D.S., Massilon, Ohio.

OBTUNDENTS.

Sulphuric ether was introduced by Dr. Ottolengui in 1888. Although this was not the first time this was used for this purpose, the broad claims made for it were effective in turning the attention of others in this direction, which has resulted in the introduction of some new and valuable agents. The ether used is the ether for anesthetic purposes. After dehydrating as well as possible by hot air and alcohol, it is applied by means of an atomizer or any spray appliance which will throw it in an attenuated form on the dentine, where it volatilizes. The effect of this rapid volatilization is to abstract the heat from the tooth, and if applied long enough the dentinal fibril will become completely benumbed. This, as would be expected, causes pain at first, which gradually diminishes. When the pain has ceased, excavation may be proceeded with till sensation is restored by the return of warmth.

Up to that time, except the application of arsenic or a like agent which resulted in the death of the pulp, this was the only method which could produce complete anesthesia of the dentinal fibril and the pulp live; yet if the temperature be reduced too far, even this kills the pulp, which shows that it is on the border-land between the safe and unsafe agents, and is only to be used in extreme cases, and then with care.

Following the introduction of the ether spray, Dr. Otto Arnold suggested the use of a spray of nitrous oxide for this purpose, but this did not receive attention till Dr. Curtis read a paper and exhibited an appliance for its use before the New York Odontological Society in 1890. Ether volatilizes at 96° F., and nitrous oxide at 148° below zero; and since the intensity of cold is in proportion to the rapidity of volatilization, it is apparent how powerful an agent we have in nitrous oxide. The enormous pressure necessary to keep the agent in the liquid form necessitates a very strong tube for conveying it to the mouth—so strong that it becomes unwieldy. The appliance of Dr. Curtis consists of a rubber tube encased in a strong leather sheath, attached at one end to the cylinder and at the other a valve and a small nozzle. By this means the liquid is conveyed to the tooth, where it volatilizes, producing such intense cold that the parts are quickly benumbed.

There are three objections to the use of this agent on sensitive dentine: The unwieldy apparatus necessary, the irregularity of the flow, and the danger of such a powerful agent. On account of these it will hardly come into general use.

In 1889, Dr. M. L. Rhein introduced chloride of methyl as a cold-producing agent. This is an ether having the formula CH_3Cl. The hydrocarbon radical is very low in the series, and for this reason we find it difficult at ordinary temperature to keep the methyl from passing into the gaseous form. Its boiling point is 73° F., while that of rhigolene is 64° F. We therefore have at our command an agent which is between ether and rhigolene, and which by the warmth of the hand volatilizes with sufficient force to form a continuous spray. It is capable of reducing the temperature to about 40° below zero, which gives it a range wide enough for all ordinary purposes. It has no affinity for water, and when used as an obtundent for sensitive dentine it acts purely by abstracting the heat.

It is furnished in liter cylinders, and with the proper valves and points it may be easily brought to play on the tooth.

Its virtues may be summed up in the following: Volatilizing at ordinary temperature, it requires no apparatus for generating a blast, as with ether. Since it is not a solvent of caoutchouc, it may be carried to the tooth through a rubber tube and its flow regulated by a thumb valve. It produces more intense cold than ether, and on that account the pain following its application is brief and the obtunding effect of much longer duration. It therefore also requires less time to obtain the same results secured by ether. It volatilizes more rapidly, so that the adjoining parts are not covered with the agent.

The objections to chloride of methyl as an obtundent of sensitive dentine are that it is a general anesthetic, like the other volatile agents, and is very likely to be inhaled during the refrigerating process. It is also at the present time rather expensive. Altogether, it is all that Dr. Rhein has claimed for it as an obtundent, and it is to be preferred as a cold-producing agent for sensitive dentine.

Chloride of ethyl is the last agent of this kind introduced. It resembles the methyl in many respects. It is a colorless ether, having the formula C_2H_5Cl, having like the methyl chloride, an ether odor. It volatilizes at 50° F.

It is a French product, and comes to us hermetically sealed in three-dram glass tubes, one end of which is drawn out into a fine point. This form readily commends itself. The directions for using are to "break off at the file mark." This will do if it is to be used as a local anesthetic, but I find that as an obtundent of dentine the opening at that point is too large. The ethyl issues in a stream large enough to flood the cavity, and it does not volatilize fast

enough; whereas, if the point be ground off with a corundum disk about a quarter of an inch farther toward the end, the jet will be so attenuated that if held a little distance from the cavity, it reaches it just as it is breaking up and is rapidly volatilizing.

The advantages of chloride of ethyl are similiar to those of the methyl. It requires no apparatus for generating a blast. The form in which it is furnished us is neat and the usual size of dental instruments. It is effective.

While all the above-named are cold-producing volatile agents, on the other hand, and at the other extreme, there have been introduced heated air carrying a vaporized agent, and a jet of some agent which volatilizes about 98° by the aid of heat.

The action of these heating agents is essentially one of desiccation. Their virtue lies in the heat, and the vaporized agent conveyed is of no value unless it has an affinity for water.

The small obtunder, the invention of Dr. Small, consists of a cylinder with a heating bulb and proper points. In the cylinder is inclosed a cartridge containing absorbent material saturated with alcohol. The bulb is heated, causing the alcohol to vaporize when it is conducted to the cavity through a fine nozzle. This, on account of the heat is painful at first, but the pain passes away, when the excavation may be proceeded with. The use of alcohol in this instrument on account of its affinity for water immediately recommends it.

The Milton obtunder consists of a chamber surrounded by a water-bath kept at blood-heat. In this vessel is contained the agent to be vaporized. Compressed air, after passing through a coiled tube also immersed in the water, enters the medicating chamber and carries the vaporized agent with it to the cavity of the tooth. Those agents like chloroform and ether, which volatilize easily, are contained in an outside vessel which communicates with the medicating chamber. This differs from the Small appliance by the use of a blast of warm air as a vehicle for the vaporized medicaments. The inventor says the oil of cloves, cinnamon, cajeput, eucalyptol, or thymol may be used, but recommends the following formula:

R. Gum camphor.....3vi
Carbolic acid.....3iv
Acetanilid.....3j M.

Since the temperature of this application is normal to the tooth, it will not be painful on application. The desiccation is not as rapid as when a higher temperature is used, and so it requires repeated

applications. The apparatus is somewhat large and complicated, but these are compensated for by answering other purposes.

The Richmond obtunder consists of a perforated cartridge containing cotton saturated with carbolic acid, oil of cloves, cinnamon, and wintergreen, equal parts. Compressed air passes through this, and, being heated, is charged with the volatilized compound. This gives results similiar to the other two methods, except that it cannot be as effective, because the liquid used has no affinity for water.

—*L. E. Custer, in American Association.*

THE EMOLUMENTS OF DENTISTRY.

There is a very erroneous impression in the public mind in regard to this, for generally, after all expenses are paid, dentistry is not the lucrative calling that many suppose it to be. I have been, and still am, very fond of the practice of dentistry, and am anxious to see both its science and its practice advanced in the highest degree possible. The time was when there was no wish nearer my heart than to see at least one of my sons engage in the practice of dentistry, but I can now say that I am truly thankful that none of them have done so; for such a great hoard of improperly educated graduates are turned out from our dental colleges that the profits of the profession are no longer tempting, and, to say the least, its respectability is not now what it should be. While a few of these graduates may be considered as well qualified to practice, a large majority are not, or are they making respectable livings. Dr. Harlan says that there are very few of the dentists in our city doing a business of $25,000 per year, and many of them not over $2,000. This estimate is too high, and I challenge any one to show that, out of nearly seven hundred dentists in Chicago, we have five who are doing a business of over $15,000 per year, and that there are ten more who are doing a business of over $10,000 or twenty more who are doing over $5,000 a year, (while there are large numbers whose net income will not reach $1,000); and that there are not more dentists in the city whose net income is not over $1,500, than there are of those who earn $3,000 per year, and yet in their scramble for money, our colleges *will have* students; and to get them the entrance examination is made easy, as their graduation is as good as assured, and they are encouraged to believe that a lucrative practice awaits them as soon as their course is finished; notwithstanding the fact that, with a very large majority of the practitioners of dentistry, the profession is fast becoming a beggarly calling.

—*W. W. Allport, in Dental Review.*

BANDING ROOTS.

The question of banding roots for crown and bridge-work, for all kinds of crown and all kinds of bridge-work, is still a very open question. My excuse for presenting this subject may be explained by stating that in the last two years cases have come under my observation which show the condition in which banding roots is to-day. When an eminent practitioner in this country comes to New York and brings an entire upper and under set of natural teeth, a few days before extracted from the mouth of a lady in this city, that had been crowned and banded around a few months before from one end to the other at the expense of six hundred dollars; when he brings that to New York and asks us not to get too near for fear we shall observe something we ought not to see or smell—that means something serious. When he says he extracted these teeth to save the patient's life, after a consultation with eminent physicians; when that work is done by a crown and bridge-worker, not a novice, but counted one of the best—that means it is an open question, and very wide open. When, during the same year, a lady came to my office and said that she had bands driven up around her teeth till she jumped out of the chair and said, as Charlotte Cushman or any of our best tragedians would say, "Doctor, I shall be a raving maniac if you put another crown on or drive another band on my teeth;" when a lady came to my office last year and said, "I was sitting in an office of a very large establishment in this city, having some crown and bridge-work done, and an army officer entered and said, 'Dr. So-and-so, take these bands off my teeth or I will blow your brains out; I will give you five minutes to do it,' "—I say it is an open question, or I would not take up these few minutes.

I have always been an advocate for not banding, unless it cannot be helped. I mean that yet. But when bands can be devised that will not touch or injure one of the most delicate of all tissues of the human anatomy, the periosteal membrane around the necks of teeth; when a band can be put on so that a patient is not disturbed any more than in an average dental operation; then we can band a crown. In the present state of the art there should be never a gold band. If we are doing any piece of work and have a gold band, we cannot put it in our furnace and bake it. It should always be a platinum band, because a platinum band will always stand the fire for baking or soldering. I have here one of these platinum bands, which I believe to be entirely new. Adam may have put one of these on for Eve and not hurt her a bit, for all I know; but this is

the way I am banding roots altogether. The system is applicable to all work on roots, where collars or caps are indicated, either to preserve cement, prevent splitting, or provide against great strain, for gold bridges, porcelain bridges, porcelain-faced or all-porcelain crowns. I take a piece of platinum, 30 to 36, very thin, always just as thin as I can get it to do the work with. Wrap it around and lap it over, just as you would if you were making a gold band. I find there are no two ends of roots alike, and that is why this system comes in well for capping those ends of roots. I take that band and put a piece of 30 or 60 rolled pure gold between the laps, hold it with the pliers, put a little flux in it and solder it, file it down and fit it on. Tell the lady something about the weather's being nice; do not let her know you are doing anything; but when it is fitted properly take a fine-pointed pair of small scissors and take it out, after marking inside the root margin, and slit it right down to the mark (about ten slits). That platinum band will bend over like pure gold after replacing it; or slit it on the root, if the case will permit. If you want to make a magnificent adap'ation, put your electric plugger on (if you are fortunate enough to have one around that is alive), or any kind of a plugger (if you are unfortunate), and work it around, holding the cap in place with an instrument or a wood point. You will see I have a perfect adaptation. This platinum band is not fastened to the two-pin bicuspid crown; it is just as I have plugged it over the natural root in the model. In extreme cases, where we have not time to solder, we cement that on. We have here a porcelain crown. It may be cemented on with the addition of this band without soldering. The band may be burnished in any undercut. Many roots have decided undercuts, as in the case cited where the lady's life was saved. You could break off the sulphur end of a parlor match and hide it up between the gold band and the root. Generally I bake on porcelain, and cover up the band in front, fixing it so that there is room for a little film of porcelain in case of future recession. I have a lady here who I am willing to show to any of you who are anxious to see the operation in practical use.

It is proper to cut off teeth if ladies wear unsightly gold fillings. It is proper to cut them off and crown them. We are justified in cutting off a tooth at the present time, when five years ago it would have been considered a serious case of malpractice to do so. I look around me and see four or five eminent dentists who were spoken of a few days ago. A lady came to my office and said, "I want that lateral crowned." She said she could not get anybody to crown it. She mentioned the names of a number of eminent

dentists who refused to do it. Would you not pull out a set of teeth to save a lady's life, as our friend did? Would you not cut off a tooth that preyed on her mind so that there was an abnormal growth there? I am not ashamed to say to these eminent men, who said it was malpractice, that I cut that tooth off. Some of them are looking at me. It is two months ago, and she is married now. She said, "This has been a nightmare to me for twenty years, all day long." She would look at her sisters, who were very much handsomer than she, and she would look in the glass and lay all the difference to that tooth. To cut off a defective tooth and replace it with one not as good is malpractice; but to cut off a defective tooth and replace it with a better one in strength, appearance, and comfort, is dental art. —*E. Parmly Brown, in American Association.*

NEW MEXICO FOR CONSUMPTIVES.

I have just returned from a trip through California, Arizona and New Mexico, and it may interest the readers of the *Homeopathic News* if I give a little impression of the country. If I premise by saying that at every point I was assured that I had visited the country at the very worst time, it may be inferred that I met a December atmosphere everywhere; still, I was in the land of sun.

California is a wonderful State, with a great variety of climates, but I was looking for *the* climate for phthisis in the second stage. San Francisco and northern California do not welcome this class of cases. On the coast, out of the sun, one is in an ocean temperature, which is usually below 60°.

In southern California, from Los Angeles to San Diego, there is much sun, but when the sun is hid either by fog, cloud, or at night, the ocean temperature holds sway at least 20° lower than invalids relish. In not a hotel did I find that the building was heated to render these patients comfortable. A stove in the office seemed to be their idea of a sufficient provision for artificial heat. As a friend remarked, "Californians can stand more cold than any people I ever knew," but of course this was their most disagreeable time. However, I was greatly astonished to find that they made no effort to have it comfortable. Under such circumstances it is not strange that cases in advanced stages fade and die. The best points in California I found were above the orange groves, among the foothills from Pasadena to Pomona and from Riverside to San Diego, well back from the coast.

TREATING SENSITIVE DENTINE.

The various agents used in the treatment of sensitive dentine may be classed under three principal heads, viz.:

1. Those which act by dehydration of the tissues.
2. Applications which act medicinally on the fibrils.
3. Temporary fillings.

The first of these, dehydration of the cavity, is usually a very effective method of treating sensitive dentine. The rubber dam is first adjusted to the tooth, the superficial moisture removed with amado or bibulous paper; next, a plegdet of cotton saturated with absolute alcohol is placed in the cavity and allowed to remain for a few seconds, the affinity which alcohol has for water causes it to abstract it and causes an increased density and firmness of the dentine by coagulating the soft fibrils; blasts of warmed air are then forced in. For this purpose the ordinary chip syringe may be used, the air being heated by holding the nozzle over the flame of a spirit lamp. A better instrument is the special "hot air syringe," which has a copper cell for heating continuous with the nozzle. Dr. Register, of Philadelphia, uses a storage reservoir containing compressed air warmed up to body temperature, India-rubber tubes carrying the air to the tooth on which it is to be applied. The first blast of air should be only just warm and should be cautiously applied, as hot air sometimes causes intense pain.

If sensibility again occurs after the operation has been proceeded with, excavation should be suspended and the warm air reapplied. The loss of sensibility of the dentine when treated in this manner is due to the dessicating effects of ordinary atmospheric air, under which condition the abstraction of moisture from the tubuli and the consequent inhibition of functional activity on the part of their protoplasmic contents, being so gradual, as to cause little, if any, suffering (American System, Vol. 3).

Creosote or carbolic acid, preferably the latter, applied to the surface of the dentine on wool, is very efficacious, especially in treating children's teeth; its action is much more certain and rapid, when applied after the use of the hot-air syringe, as the agent then enters the tissue more deeply. It acts on the dentinal fibrils by its power of forming insoluble compounds with albuminous matter, and, according to Dr. Flagg, slightly anesthetizes the pulp.

Another good obtundent, and one very rapid in its action is chloride of zinc. It is necessary to have it pure, and a few of the undissolved crystals should lie in the bottle containing the satu-

rated solution. In applying this, the tooth should be dried, and protected from the ingress of water preferably by the rubber-dam, a pledged of cotton saturated with the liquefied salt is then placed in the cavity, or, where convenient, it has been recommended to place a small crystal in the cavity and allow it deliquesce there.

A dull and sometimes severe pain is experienced on the application of this escharotic. This may be diminished by applying carbolic acid previously, and Gorgas recommends the application of chloroform, tincture of aconite or atropine solution prior to the use of the chloride.

As soon as the pain it causes has passed, the operation can be proceeded with, two or three applications generally doing away with all sensibility. Though its action is superficial, it should only be used in shallow or moderately deep cavities; if used in very deep cavities the pulp is endangered.

Arsenic is a sure remedy for treating sensibility, a minute quantity is sealed in the cavity and left for one or two hours, after which the dentine is found to be entirely devoid of tenderness. Arsenic, however, possesses a most serious objection, producing death of the pulp. Owing to this it is very rarely used, it only being permissible as a last resource in shallow cavities. It should never be used in teeth of soft texture and teeth of young persons.

Minute quantities of arsenic, even when used dry, as Tomes directs, appear to have the power of devitalizing the pulp even through a moderately thick layer of dentine; death of the pulp may result in a few weeks, or perhaps months, the patient returning with some disturbance consequent on putrefaction of the pulp, necessitating the tooth being opened, and the roots treated; though used with the greatest caution, this most undesirable end is likely to be brought about, therefore its use, notwithstanding its seductive certainty, is strongly to be deprecated, its application for this purpose being considered "bad practice" by most operators. The monoxide of cobalt has been used on account of the arsenic it contains, on the supposition that it is not absorbed so readily as arsenic.

A strong solution of tannin either in alcohol or carbolic acid is a useful application for allaying sensitiveness, or Mr. James Stocken's formula:

℞. Tannin..... ℥ ij.
Tr. arnica..... ℥ ij.
Tr. myrrh.....d. ℥ i.

will be found beneficial, these tannin preparations having a hardening action on the dentine by their strong astringent powers acting

on the fibrils. Besides this, the tannin constringes the pulp and thus assuages pain; for it is the swelling of the pulp in its confined space that causes pain.

Eucalyptis oil is often found efficacious on account of its astringent and anesthetic properties. A special apparatus for obtunding sensitive dentine produced by the firm of Messrs. Simonis was shown and demonstrated with success at the Berlin Congress of 1890, by means of which a fine spray of vaporized alcohol is allowed to play on the cavity. Another agent for producing local anesthesia is chloride of ethyl, this is now conveniently put up in glass flasks, one end of which is elongated into a capillary tube with the end sealed, to apply, it is only necessary to break the end of the fine tube; the heat of the hand, vaporizing the drug, a fine jet is projected into the cavity, this has been highly spoken of by some of our transatlantic brethren.

Great things were expected of cocaine, but experiments with it on dentine have been rather disappointing, by mopping the cavity with a 20 per cent solution of the hydro-chlorate is sometimes beneficial. Dr. John S. Marshall found that by applying a solution of *citrate* of cocaine from about five to ten minutes was good. Nitrate of silver applied to the eroded surface is good. It is used either in the solid form, or in a saturated solution; facility and safety when fused on a platina wire, as fracture of the stick caustic in the mouth might prove dangerous. Its use in front teeth is inadmissible owing to the black stain, therefore in eroded front teeth, repeated applications of zinc chloride in the solid form should be tried.

When, notwithstanding the careful applications of remedial agents, it is still found impossible to finish the operation at one sitting owing to the pain caused, a temporary filling should be inserted. The filling used for this purpose should be a non-conductor, non-irritant, and one fairly easy of removal. Some are used on account of the therapeutic property they possess, and some merely as plugs to protect the dentine from contact with irritating substances. Thus, the oxychloride of zinc is a valuable temporary filling, as it generally contains a little free zinc chloride when inserted, which acts on the dentine; or the oxysulphate of zinc, the preparation known as "Fletcher's dentine," being the best, is used on account of its astringent action, while gutta-percha and oxyphosphate are used solely as plugs. If the sensitive tooth is treated by the insertion of one of these fillings and left for two or three months all irritation will be gone, and the tooth can be permanently treated without causing the patient the slightest discomfort.

—*J. C. Langford, in British Journal.*

HOW I GOT A START IN DENTAL PRACTICE.

As I anticipate a rather florid display of my ignorance at that time, I beg to preface my story with a statement or two. I went directly from a counting room of a mercantile house in Cincinnati to the dental college, having had no practical experience whatever of dentistry. I had become so imbued with the idea that the study of the theory of a profession is of paramount importance, that while attending lectures I almost wholly neglected practical work, innocently assuming that the trifling details of filling teeth, extracting, and making plates could be easily picked up later. When at the end of the term, I received an offer to assist as a "rubber boiler" in a western office, I joyfully accepted with little or no misgivings as to my ability to fill the position. Up to that time I had made two full upper gold plates out of brass, in the college laboratory, three partial rubber plates, and a full rubber denture for an aged negress. The latter case taxed my ingenuity, I remember. I must have forgotten to take a "bite," for when I inserted the teeth the under set projected unduly about an inch and a quarter, presenting a curious appearance of prognathism not commonly found in the African subject. Then in the upper set the bicuspids on one side were abnormally elongated, while on the other side they were "out of sight." Otherwise the fit was unexceptionable, and as the old lady was anxious to attend a lawn fête that afternoon, she was easily persuaded that by perseverance she could readily master any trifling annoyance she might experience in the first wearing. In accordance with her request I had selected narrow, white teeth, so that the effect when she smiled suggested a white picket fence closing the entrance to a coal mine.

Encouraged by my success, I prepared with a glad heart for the five hundred miles' journey to my new field of usefulness, by borrowing $25 from a brother, who had implicit faith in my mechanical genius, and in my assurance that when it came to the matter of salary, as yet unsettled between my employer and myself, I would be able to name my own figure. I haven't the slightest idea what he ever did with the sixty days' note I gave him.

But I must get at the pith of my story. My new employer proved to be an affable, good-natured man. On the second day of my service he so far took me into his confidence as to borrow all the money I had. At the end of the month I concluded to quit. I might have "resigned" earlier, without encountering any serious opposition, I presume. I recovered the money I had lent, and saying nothing about the amount of my salary due me, took the first

train in quest of an uncle who lived a hundred miles away. I wanted to get as far away as possible from my employer, for while he had not once referred to the matter, I could see that it embarrassed him whenever he thought of the $75 worth of plate work I had spoiled for him. My uncle, a farmer, had never seen or even heard of me. On my satisfying him of my identity, he consented to my staying at his house till I could put myself together and decide what to do. The latter question he kindly undertook to decide for me a day or two later; he lent me four rusty forceps of an antique pattern (he had been a physician, years before), mounted me on an old lame horse, and started me off to seek my fortune. I had never so much as extracted a tooth, and I think my first effort hurt me quite as badly as it did my patient, a stout country girl. As the tooth came out she fell down in a heap on the floor. I thought for an instant that I had extracted with the tooth the girl's vital principle. But she got up presently, unwound about two yards of blue yarn stocking, which she took from a bureau drawer, and handed me half a dollar. Then I hurried away to my horse, pale but exultant.

For two weeks I traversed the highways and crossroads of that benighted country, and then I returned to my uncle's house with $44 in dirty scrip, money honestly earned by extracting and breaking off teeth. The sight of the roll immediately made me "solid" with my uncle. I suspected, however, that he felt somewhat chagrined because of his having himself overlooked the mine of wealth I had tapped. Within a day or two several persons with badly swollen jaws appeared at his door, which circumstance prompted me to act without delay on a suggestion my uncle had offered, that I retire on my laurels to a small town twenty miles distant, and open an office. I had never, until the morning of my arrival at the place, so much as heard its name, and of course did not know a soul there. I introduced myself to a physician, and before night had made an arrangement with a lawyer—the only one in the place—to share his office, paying him three dollars rent in advance. He had two rooms over a general store, on the public square. The rooms were separated by a pine board partition, unpainted and unpapered. They were unpretentiously furnished with a rusty box stove, two chairs, a settee and the lawyer's bookcase. The floor was carpeted with coffeesacking stitched together. The approach to this cozy retreat was by means of an outside stairway, which ushered the caller into a large store-room filled with boxes and barrels, between which a passage was usually to be found leading to our double office. Among the rafters overhead a varied

assortment of mud and paper wasps' nests supplied the lack of any express effort at ornamentation.

By way of fitting up, I bought a lounge-bed (second-hand), a lamp, two or three chairs, and a tin hand basin. I also rented for 75 cents a month a new barber's chair, the barber having died the week before. For instruments I had half a dozen cheap pluggers, half an ounce of amalgam, a few drills and excavators, and my uncle's forceps. With the ingenuousness of youth I wrote to a western dealer ordering $25 worth of instruments, foil, etc., promising to pay in the indefinite future. The goods came promptly by the first mail, and with it a kind note wishing me success. And that dealer of course knew nothing about me! You needn't say you don't believe this. It is literally true. I paid him as I was able, and years afterward, when I had removed to a remote field, I continued to deal with him till he went out of business, for I never forgot his kindness.

My first patient was the barber's widow. She came on the first day. I filled for her four cavities, with amalgam, and got the $6 fee I charged, on the spot. The lawyer, who had been sitting at his desk furtively watching the procedure, turned green with envy. I saw that in his face which suggested a determination to raise my rent, and sure enough, he did promptly, at the earliest opportunity. However, I didn't say much by way of protest. We had no other expenses, as we kept no office boy, and never swept or dusted.

The first month I made $32, all by amalgam filling and extracting. My associate in the office was by this time saying less about the dignity of the legal calling, and more about the advantages of professions which yield prompt money returns. What that man live on I am at a loss to say. During the twenty months of my stay with him, he had only two paying clients, and his receipts were just $19. I heard afterward that he learned the cooper's trade, which in that town paid from $2 to $4 a day.

During my second month a young man came in who wanted four incisor cavities filled with gold. I had filled several teeth with gold while in college, that is to say, I had assisted one of the seniors to adjust the dam, and had malleted for him. It seemed to me that he made a stupendous fuss about filling those teeth, and I felt sure I could have done it in one tenth of the time. So with a profound contempt for those fellows who can't do a little trick like filling a tooth, without straining their flexor-carpi-radialis, and going to bed with a fit of nervous prostration, I set to work. I cut four slits in my dam and tied it on with thread. Every time

the man coughed a bubble as big as a hickory nut bulged out through one of those slits.

I wasn't to be disturbed by trifles, however, so I let them bulge. They interfered only slightly with my view of the cavities and I had other more important details to look after. After several failures to make the old cohere (I had forgotten to anneal it), I got out the only book I had, Taft's Operative Dentistry, opened to the chapter on filling teeth and proceeded to imbibe and practice its precepts. I also lighted my coal-oil lamp and carefully annealed my gold by holding it over the chimney. You needn't laugh. I saw a city dentist annealing foil in a gas flame, recently. But in his case, as in my own, the gold wouldn't cohere worth a co-huss. By dint of seven hours of pounding, punching, wedging and sweating (during which I am not sure that I succeeded in refraining from heterodox expressions occasionally, for some very good men in moments of trial use extravagant language merely as a form of protest against Pharisaism), I say, then, that I at last got the cavities filled. To be sure, the fillings presented a somewhat scooped appearance, as also did the patient. But I concluded that they would probably stay until I got ready to move. The young man paid me the $10 previously agreed on, and, after having expressed himself in fervent terms respecting my manner of handling his person, went away. Then I charged up $700 in my ledger, representing the value of my day's service, and $10 in my cash book. The first memorandum was to assist memory and imagination when I should find time to write home and report progress in acquiring business; the second record was for strictly private reference. I have always, since that time, adhered to the practice of keeping my ledger and cash accounts widely separated, in case any over-inquisitive professional friend should demand substantial confirmation of statements I may see fit to make about the growth of my business.

In the course of three or four months I found myself in receipt of a monthly income running from $40 to $75. One month I made $130 nearly. I had to buy a pocket-book. The railroad telegraph operator and express agent, who in summer wore white flannel suits and was quite a swell, began to nod to me. I bought a horse, and when business slackened, as it frequently did, I mounted him and rode about the country filling teeth, making plates, and spreading far and wide the infamy of dentists who travel about extracting teeth. For by dint and perseverance and study I had become a tolerably fair dentist. I now annealed my gold by means of an alcohol lamp made out of an ink bottle with

a pen barrel driven through the cork. It served my purpose quite as well as any two-dollar lamp would have done, though it was not very pretty.

But I was not to remain in undisturbed possession of this rich and productive field. A graduate of a Western college located not far from me, a man whose articles I have frequently of late seen in print in the *Review*. He denounced me to my face for using amalgam. I think we must have swapped opinions of late years, for recently I saw an article from his pen advocating the use of this material.

And now in conclusion: as I look back to those days of unutterable wretchedness, everything about them appears rose-tinted. I smile when I think how many bridges I crossed before I came to them. And I realize now how invaluable was the lesson of self-reliance I learned. And when I came away I left behind me a circle of warm-hearted friends, some of whom had lent me a helping hand when I needed it. But ultimately I paid my way in full, saving enough besides to carry me through the dental college. Dentistry is not usually a fortune-making profession, but it stands in the front ranks of the callings in which he who engages may go off among strangers and make his way with more than the average degree of certainty. And now as I look down from the dizzy heights of my present position and recall those hours of distress and anxiety, when as a stranger among strangers I frequently found myself with only $1.35 between myself and poo—that is to say—reduced circumstances, I am inclined to disdain the fear of adverse comment by which some might be lead to sign a fictitious name to such a production as this, and subscribe myself,

—*Frank W. Sage, in Review.*

Evils of Living at High Pressure.—High nervous pressure, whether in school or in business, on the stage, in the hurly-burly of social life, or in the seclusion of the studio, is almost certain to lead to the use of stimulants. The first is usually beer, followed by wine and whisky. When these have brought on painful nervous disorders, the most common of which are sleeplessness and neuralgia, opium, morphia, and choral are resorted to. They give temporary relief, but it is as deceptive as the placid and inviting surface of a bottomless quicksand. The records of hospitals show that a large majority of the worst victims of these disorders come from the high pressure class. They simply overworked themselves, and resorted to these means of averting the just penalty.

—*Ohio Journal.*

ON THE VALUE OF CRYSTAL GOLD IN DENTISTRY.*

Crystal gold was first brought to the notice of the profession as early as 1855 or 1856. In the winter of 1856 or 1857 I was attending my first course in the Ohio Dental College, at Cincinnati, and Professors George Watt and J. Taft had invented a form of crystal gold which they exhibited before the class, filling a number of teeth to demonstrate its superiority over gold-foil. Professor Taft built up for me before the class an upper molar, broken down on three sides to the gum, with this new gold, and it was considered a wonderful operation, as this was before the days of the advent of the rubber-dam and the mallet, and all of the other aids to operative dentistry which we now possess. This filling was one of the wonders of the day, and it had to be exhibited at all of the associations for years.

This form of gold was made after what is called the mercury process, which consists in dissolving pure gold in one part of pure nitric acid to three parts of pure hydrochloric acid, and the gold precipitated by slowly adding a strong solution of sulphate of iron and letting it stand undisturbed for about twenty-four hours, when the gold may be found in the bottom of the vessel in a brown powder. The solution is carefully poured off and the gold is poured into a flat dish and pure sulphuric acid added, sufficient to cover the gold, and allowed to stand for a few hours to get rid of any iron which may be present. Then the gold is washed with several workings of distilled boiling water till no taste of acid remains. It is then allowed to dry till all moisture disappears. It is placed with pure mercury, a little at a time, in a wedgewood mortar and ground together till it is a thick paste, when it is again washed with hot distilled water till the water remains clear. It is then placed in an evaporating dish, a steam bath, and dilute nitric acid added to cover the mass, and watched closely till all of the mercury has been driven off, which leaves the gold in crystal form. This is washed with distilled hot water till no taste of acid remains. Then the gold must be placed on a soapstone slab and put into the fire and slowly heated to redness, which drives off any impurities and anneals it, and it is then fit for use. The process being somewhat difficult and complicated, and attended with some danger to the health, the inventors were never able to make it in sufficient quantities for sale, and the profession were deprived of a very valuable aid in operative dentistry.

* Read before the American Dental Society of Europe, at Heidelburg, August 4, 1891.

Becoming associated in practice with Professor Watt in 1865, we continued to make it for our own use during the seven years of our association, and I have never, before or since, filled teeth with such satisfaction to myself and patients. After coming abroad to practice, I did not have the same facilities for its manufacture, and I was forced to resort to the hard work of making fillings with gold-foil.

The crystal gold, known under the name of A. J. Watt's crystal or sponge gold, was brought out about the same time as that of Watt and Taft. At first it was not a success, as complaints were made that it discolored in the mouth, and did not make a perfect filling at the margins. This may have been due in part to bad manipulation, for, being very spongy, one was inclined to use it in too large pieces, and it then would harden under the instrument before it was condensed throughout the mass. The makers of this gold have steadily improved it till now it is a very valuable gold in saving teeth. —*Dr. N. W. Williams, in International.*

REPLY TO "YOUNG DENTIST" IN FEBRUARY "ITEMS."

I have been using the formula you quote for painless extraction of teeth continuously, since it first appeared in the ITEMS.* Have never known of a case of swelling to follow its use. I inject from one to three drops right where I expect the beaks of forceps to press the gums. The removal of tooth will hurt some in almost every case, but there will be no pain in grasping the tooth well up to the process, and no unpleasant results will follow. I have been using cocaine preparations in this way for a year and a half, and my success at removing badly decayed teeth and broken down roots, have eclipsed all former efforts. The hypodermic needle, as it comes to us, is not properly pointed for this purpose. The taper at the point is so long that too much pain is caused by entering the gum far enough to confine the fluid. I grind down close to opening to the finest possible point. Should the needle become clogged, unscrew it, fill your syringe with water, replace the needle, and forcibly eject the water. *Old Dentist.*

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* The formula referred to is:

Cocaine hydrochlorate	20 grs.
Sul. atropia	1-10 gr.
Car. acid crystal	10 grs.
Chloral hydrate	5 "
Water	1 oz.

SENSITIVE DENTINE.

People very often complain of pain in carious teeth, where the decay is only very superficial and where there are no signs of pulp complication, this is generally caused by the exposed dentine being sensitive and irritated by either contact with the air or such agents as sugar, salt and vegetable acids, almost invariably a dressing of carbolic acid covered with a mastic plug will give relief, after which the tooth should be permanently treated. Many cases come to us for treatment where the decay is not at all deeply seated and where no pain has been experienced, we chip down the enamel wall and proceed to excavate and it is then that sensitive tissue is found, sometimes we find only a thin layer sensitive, sometimes the whole of the discolored dentine is tender, or sensibility may not be experienced till we are shaping our cavity by cutting into the healthy tissue; some situations are found invariably tender, for instance, labial cavities in incisors. Harris says, "we may always expect sensitiveness at the union of the dentine with the enamel, because at this point the fibrils terminate."

It is sometimes difficult to distinguish between really sensitive dentine, and dentine made sensitive by force of imagination; many people, especially nervous females and children, when visiting the dentist for the first time, generally go with feelings of apprehension, and the fixed idea that they are going to be hurt, and will try and make you believe that you are torturing them merely by examining their mouth with a mirror, to say nothing of what you do when excavation is attempted.

Forceps and a lot of instrument left lying about in an ostentatious manner does not serve to dispel their fears. With patients of this class, a calm and reassuring manner goes a long way. Operate on the simplest case first in as gentle a way as possible; by doing this the patient's confidence is gained, and future visits are looked to, if not exactly with pleasure, at any rate without feelings of alarm.

Also, be careful to distinguish sensitive dentine from the pain which arises from irritation of a pulp when closely approached by decay, especially where caries has converted a layer of dentine over the pulp into a cornified elastic state; each stroke of the excavator on this tissue makes pressure on the pulp, causing pain which is ascribed to the dentine.

Blunt excavators, used with a scraping or a levering action, often causes unbearable pain, whereas if the instruments are thoroughly sharp, as they should be, and are made to *cut* in a direction

from the pulp, this will not be the case. Sometimes the dentine is very sensitive when first touched, but becomes less so after a little while. Often when cutting in one direction, say, right to left, the pain is unbearable, when the motion is reversed, left to right, it becomes endurable. Where the dentine is so abnormally sensitive as to make excavation unbearable, and where the patient flinches at the use of the dental engine, the operation must be suspended, and some of the remedial agents to which we have access should be applied. The selection of these will depend on the intensity of the pain experienced, on the tooth and depth of the cavity under operation. —*J. C. Langford, in British Dental Science.*

THE INFLUENCE OF TOBACCO ON GASTRIC DIGESTION.

Dr. J. Ydan-Pouchkine reports a number of experiments, which he has made in this connection, on seven healthy individuals, who were not habituated to tobacco-smoking, and his results are reported in the *Bulletin General de Therapeutique* for February 15th, 1891.

He first examined the effects of tobacco on the gastric juice and the motility of the stomach, and on the degree of absorption. For three days the author examined the gastric juice and motility of the stomach, noting the degree of motion of the stomach by salol, according to the process of Ewald, and the rapidity of absorption with the iodide of potassium, according to the method of Zweifel, during a second period of three days each, in which the individual smoked, respectively, twenty-five cigarets daily. For three days after this period the author continued the examination of their gastric juice to determine the after-effects of the tobacco. His conclusions are embraced in the following statements:

1. Tobacco increases the quantity of gastric juice, but diminishes its acidity.

2. The quantity of free hydrochloric acid of the gastric juice is diminished under the influence of tobacco.

3. Proportionately to the decrease of the amount of hydrochloric acid there is an equal diminution of the digestive power of the gastric juice.

4. Tobacco, likewise, slows the action of the gastric ferments.

5. These modifications in the gastric juice, produced by tobacco, last for a period of several days.

6. As regards the motility of the stomach, and its power of absorption, tobacco produces an increase of these functions.

—*Therapeutique Gazette.*

EXPANSION OF RUBBER.

EDITOR ITEMS:—It makes me laugh to hear Dr. "B." say that "rubber plates are invested in plaster which is as unyielding as the everlasting hills, and incased in a flask of heavy metallic plaiting, so that there is absolutely no room for expansion without increasing the size of the flask." Oh, my! Did he never look at a piece of plaster under the microscope to judge of its porosity? Has he forgotten how soft the plaster is when it comes from the vulcanizer? Does he not know that the plaster investment, though in the heavy metallic plaiting, will not offer resistance, even if vulcanized at the lowest degree possible, taking all the time he likes? Has he never seen the small globules of rubber that appear all over the surfaces of his rubber plates as they come from the vulcanizer? Has he never found it necessary to go over his plates and remove all of these little prominences which are one of the highest evidences of expansion, and that plaster is not unyielding? Has he ever examined a piece of vulcanized rubber under the microscope? Has he ever made any test to see whether it does or does not? Let him make a chloro solution of rubber and put in a small bottle, allowing the chloroform to evaporate from time to time, till he has the bottle filled with a solid mass of rubber; then make a thin mixture of oxyphosphate and pour in on the rubber, and when cement is hard, invest in plaster covered with his "heavy metallic plaiting," and if then he says rubber does not expand, I will confess my sins before the world. Another test: Let him take a small brass tube, say one inch long, and saw a straight line through it, dividing it into two equal halves, then place a small roll of rubber in it and draw it together with binding wire, wrapping thoroughly, till the rubber squeezes out at both ends, and cut out a little at each end and pack in oxyphosphate, and vulcanize, taking as many hours as he likes.

Dr. Truman, in the February ITEMS, though he is so conservative I must say I have great respect for what he has to say, yet I maintain that rubber does expand in the process of vulcanizing under any and all circumstances, no matter how long it takes to vulcanize or how low the degree of heat. I will admit that the manner of vulcanizing has much to do with the condition of the mass after it is vulcanized, hence the necessity for specific direction for vulcanizing; yet rubber will not expand enough to render it useless as a base for artificial teeth.

W. N. Murphy, La Grange, Texas.

PEROXIDE OF HYDROGEN.

In reading the ITEMS of January issue, I noticed Marchand's peroxide of hydrogen mentioned as an excellent remedy for cleansing cavities. I would like to add for the benefit of the profession my experience with this wonderful chemical preparation in the treatment of alveolar abscesses and my mode of using it.

Opening the abscess in the usual manner (if there is no opening), either with the lance or through the root canals, getting a perfect drainage for the escape of all purulent matter, I thoroughly syringe with warm water till I am satisfied that no foreign matter remains, and that it is perfectly clear of all obstruction.

Then by the means of a fine pointed glass syringe, I inject several times, morning and evening, a mixture of H_2O_2. There can be no fear from its use.

The active work of the mixture is surprising, the diseased tissue becomes healthy, and an absolute cure is effected after two or three administrations. I consider it far superior to any other remedy I have ever used for alveolar abscess. *Crank.*

CAN ANY ONE ANSWER?

A youth sixteen years of age has an enlargement of palate back of right upper central, lateral, and canine, extending posteriorly as far as sixth year molar; laterally, from dividing line of palate to rugae nearest second right upper bicuspid.

All permanent teeth have erupted, except the third molars; but upper incisors lap and all upper front teeth point away, forming a bow.

The appearance is such that pressure of teeth in seeking articulation with lower incisors has crowded and exerted so much force on the thin plates of palate, as to *bulge* a portion (so to speak); and on pressing the finger on bulging portion, it perceptibly gives as if the plate was very thin.

There is no pus, or pain, and the present state of affairs has existed for a year. What must be done, if anything, and will there be any evil results from trouble?

Have removed impacted teeth (years after they should have erupted) from floor of palate. Have had several cases of necrosed maxilla requiring surgical treatment, but this gets me, as I have never seen a case resembling it. *L. A. Brown, D.D. S.*

"THE WONDERFUL CITY."

Chicago is sometimes called "the Windy City;" but its worst enemies must admit it is a "wonderful city." How it grew between 1830 and 1872, from seventy inhabitants to nearly three hundred and sixty-five thousand, and how it is growing into the million, everybody knows. How its merchants had such a reputation, that when the great fire destroyed books, securities and everything but reputation, the faith of the people in themselves, and the confidence of their creditors, enabled them to revive trade, rebuild the city, and make it one of the modern marvels of architecture, everybody knows. The atmosphere of lake and prairie stirs the soul and stimulates the brain, even when you have *la grippe*. To many a quiet man, it is doubtful if there is compensation enough to induce him to live in the terrible whirl of its existence. Everybody is on a rush. Even the loafers move quickly. And it pleases a dentist to see the amount of "go" in the profession. The quacks of Chicago represent the very quintesence of quackery. Bad and good are intensely bad and good. The leaders of dental thought and action are ahead of the world. All the world is going there in 1893, and Chicago does not intend to let the rest of the world show it anything it does not already know.

Among the many distinctions the splendid city enjoys, we were interested to learn that it aspires to the professional one of having a dental college for every one hundred of the inhabitants. However, our visit to the Chicago Dental College, of which Dr. Truman Brophy is Dean, Drs. Haslam, Johnson, Swasey, Ottofy, Gardner, and others, are Professors, was a revelation in dental education entirely new to our observation. Through the personal courtesy of Dr. C. N. Johnson, an old Ontario boy, and who has identified himself with Chicago, as any good citizen should, we had a most thorough insight into the whole system of teaching in the college. The results of the teaching were open to the eyes of any one who could see; and it was a great inspiration to witness the zeal on the part of the professors, and the remarkable attention and devotion on the part of the students. Each student in the laboratory and the operating-room, seemed as interested in excelling as if he was engaged in his private practice. A fine and generous spirit animates the class, and an unselfish sense of duty the professors. While giving very strict attention to theoretical and techinque teaching, the practical departments excel anything we ever saw before. We say this in no invidious spirit, as we bear warm feelings of grateful recollection to other schools. —*Dominion Journal.*

SENSITIVE DENTINE.

The teeth, unlike the other dermal appendages, as the hair and the nails, exhibit signs of sensibility in one of their component tissues, the dentine; sometimes at eroded spaces, sometimes where the enamel has been worn down by attrition, but most frequently when attempting excavation. Many persons, however, suffer the removal of carious dentine without the slightest pain, or, as Mr. L. P. Meredith expresses it, "One patient will take his seat in the dental chair, and have his teeth probed, drilled, burred, excavated, and hammered for hours, retaining his composure with stoical indifference, and, possibly, going to sleep, while another, whose teeth are not nearly so badly decayed, will wince at the slightest touch, and writhe in agony at the necessary application of power, pronouncing the pain unbearable, and refusing to submit to further manipulations."

Dentine consists of a hard calcified matrix, permeated by fine tubes or channels, which run at right angles to the surface of the tooth by dentinal fibril, these fibrils being in intimate connection with the tooth pulp, and are first concerned in the formation of the dentine, have a nutritive function. The manner in which the connection of the dentinal fibrils with the nerves of the pulp is effected, has not been definitely settled, the structure presenting great difficulties to histological research, so that various theories are held by different observers.

Boll, by treating a tooth pulp with a dilute solution of chromic acid, found on the surface a great number of fine non-medullated nerve fibers, which he traced and found to be continuous with the larger medullated ones. These nerve fibers he found to pass through the membrana eboris and take a direct parallel to that of the dentinal fibrils, which led him to infer that they had been pulled out of the dental tubes, but it cannot be said that Boll or any other observer has ever seen a nerve fiber actually pass into a dentinal canal.

Magitot asserts that the fibrils are prolongations from the odontoblast layer of cells, the forming cells next to the pulp, the odontoblasts becoming continuous with the nerves of the pulp by means of the underlying stellate cells; while Klein differs from this holding that the fibrils are prolongations from the stellate cells, which run up *between* the odontoblasts. No satisfactory conclusion as to the termination of the nerves of the pulp has yet been arrived at, though Magitot is fully satisfied as to their becoming continuous with the stellate cells; they are rather indefinitely

described as ending beneath the odontoblast layer in an interlacing network termed "the plexus of Rashkow." Thus we can only say that the dentinal fibrils if not in actual continuity with the nerves of the pulp are in intimate connection with them, to which they are capable of transmitting impulses. From this it is to be inferred that a degree of sensibility of the dentine may be regarded as being normal, but the condition of exalted sensibility is to be regarded as pathological, the term "sensitive dentine" of course may apply to both these conditions, but custom has limited its use to the hyperesthetic state only.

The cause of this hyperesthesia is described by Harris as being due to inflammation, but there is little support to this theory, and it is difficult to conceive such a condition in a hard and unvascular structure like the dentine.

Taft also strongly upholds this inflammatory theory, he says: "The condition of the teeth is always affected by a general inflammatory diathesis, local treatment in these cases commonly being inefficient, a modification of such a condition of the system producing a change in the affected teeth." He also mentions that persons of a plethoric or a strumous habit, and those in a febrile condition as being peculiarly predisposed to this affection, and that teeth of females are liable to be affected during any uterine irritation, doubtless in such cases as these, the oral secretions have a great deal to do in influencing the dentinal sensibility. The relative density of structure in different cases, undoubtedly is, a cause of varying sensibility, dentine of soft structure being generally found more sensitive than that of hard structure, caries exposing a greater amount of organic fiber in these cases.

Mr. Arthur Underwood has shown that where extreme sensibility exists, it may, in rare cases, be traced to the existence within the tissues of what he styles—"aberrant filaments"—anomalous nervous filaments, radiating from the surface of the enamel (Sewill). Another supposition is, that this affection is dependant on a peculiar state of the pulp, sensibility being lost on the devitalization of that organ. With regard to the function of sensation in the dentinal fibrils, Mr. Coleman assigns to them a special sensory property similar to that of touch-corpuscles, which renders them capable of ascertaining the nature of bodies which come under their action, and also of judging when those bodies are properly comminuted, to this latter he adds the interesting note that people who have artificial teeth at first find considerable difficulty in judging when their food has had sufficient mastication.

—*J. C. Langford, in British Dental Science.*

THE PULSE.

For probably two hundred years the pulse has been regarded by physicians as a sure indication of bodily conditions—a thermometer of disease—a register from which could be read one or more symptoms in the progressive stages of every inflammatory disease.

In the study of the pulse medical men have established a vocabulary of words and phrases, each of which is designed to indicate some abnormality of the heart's action, and a corresponding modification of pathological conditions. Hence, in all bed-side and clinical descriptions of disease such terms as these are found, regarding the pulse: slow, quick, strong, weak, full, feeble, regular, irregular, wiry, intermittent, etc.

That this language may be understood, it was necessary that by careful observation a normal standard of pulsations per minute should be found. It has been generally agreed, therefore, that the following averages per minute should be considered normal: of a child of five years of age, 90; of a youth at puberty, 80; of an adult, 75; in old age, 70.

Of what practical value is it to me as a sick patient, that my physician knows the average pulse of mankind and can determine the deviations of my pulse to-day from the general normal standard?

It is not the average pulse of mankind that he needs to know so much as to know *my* average pulse—as each individual has an average pulse which may be higher or lower than the general average. Any correct knowledge of *my* pulse as indicative of bodily condition must be gained by comparing my pulse of to-day with my *normal* pulse, which my physician cannot know without a series of personal observations made at different times of day and with different antecedent circumstances likely to affect my pulse. Different positions of the body, states of mind, emotions, anxieties, and mental and muscular effort modify the action of the heart and change the pulse.

The distinguished Dr. B. W. Richardson, of London, asked a friend of his, who was standing with him, to count his pulse, and he found it seventy-four. Dr. Richardson then sat down in a chair and asked for another count, when it was found to be seventy. He then lay down on a lounge and called for a third count, which his friend, with great astonishment, reported sixty-four! In this experiment it is very evident that the rapidity of the heart's action depended on the amount of nerve and muscular force required in maintaining these different positions of the body.

Some years before reading of this experiment of Dr. Richardson, I had demonstrated in my own person the wonderful effect of muscular effort, however slight, in increasing the rapidity of the impulses of the heart. I lay sick on my bed with an inflammatory disease in the middle ear. The branches of the aorta in immediate proximity rendered it possible for me both to feel and to hear the heart's impulses very sensibly. I found that if I put out my arm to turn down the bed clothing from my face my pulse quickened. When I made the effort to turn over in bed, my pulse ran on at a rapid rate. When I made the effort to rise up off my bed, my heart beat like a trip hammer, and my pulsations increased twenty beats per minute. The slightest muscular effort would change my pulse, both as to number and fullness.

Take a case now in medical practice: Suppose a physician starts out in the morning to make his hurried round of visits to his patients. A lady patient sees him coming and glances her eye about her room considerably disturbed in mind, because the girl has not been in and set the room in order. So, to save herself from mortification, she rises from her bed and with trembling hands gives her room a tidy appearance for the reception of the doctor. He comes in and seeing the flushed face of his patient, he rushes to the bedside and feels her pulse. He finds it in a rapid feverish bound. He remarks, "Your pulse has gone up at a rapid rate since my call yesterday." Then he sits down to his list of antifebrile medicines and prescribes for a case of fever. The doctor has scarcely got out into the street before the fever leaves his patient without even having touched her medicine. The pulse has subsided to what it was when she first saw the doctor coming. Had he not been in such haste, and had he been mindful of the possible change of the circulation produced even by his patient turning over in bed, or cherishing anxious thoughts, he would have waited a while, then felt her pulse a second time. It requires but from five to ten minutes for the pulse to subside to its previous condition. My observations on myself in relation to the effect of muscular exercise on the pulse, and on my patients who climb a stairway to reach my office, has convinced me that nothing but an intelligent study of the pulse of each patient, taking into account all possible influences which might for the time affect the pulse, can be of any use as a diagnostic indication of disease. The frequency and other characterists of the pulse is peculiar to each of us whether in health or disease.

Prof. L. C. Ingersoll, Keokuk.

"THERE IS DEATH IN THE POT."

Some men die natural deaths, some achieve destruction, and some miss it, through no fault of their own. Among the latter class are those dentists who purposely, and of malice aforethought, permanently close up the blow-off valves in their vulcanizers. If there is any one idiot who deserves everlasting encouragement, it is he who drives the point of an excavator into the opening left by the manufacturer to secure his own safety. Not necessarily because he takes the chance of blowing out his own brains, but because he perils the lives of those who are innocent of his crime.

What would be thought of the engineer who would chain down the safety-valve of his boilers? The western steamboat man, who hung a monkey-wrench upon the bar, has passed into a proverb of recklessness. But not infrequently the dentist, who is in charge of a boiler of copper that will restrain pressure to a much more dangerous point, will obliterate his safety-valve altogether, trusting solely to a thermometer, notoriously unreliable, and will complacently stand upon the brink of eternity, waiting for the explosion that must inevitably come sooner or later. He is infinitely less excusable than the didn't-know-it-was-loaded zany, who snaps a pistol at his neighbor's head, for he knows it *is* loaded.

Are we stating the matter too strongly? The calm-blooded reader would not think so if he could see the condition of some of the vulcanizers sent to the manufacturers for repairs. Strained, twisted, contorted, with swollen protruded sides, held together only by the perfection of the workmanship, it makes one shudder to think of the terrible risks incurred in handling these magazines of death, with the only avenue of safety irrevocably stopped. Do dentists imagine that the safety-valve is inserted in the vulcanizer for an ornament, or do they believe it is put in merely to annoy the laboratory assistant by blowing out? The very fact that it does not stay, is an indication that the thermometer is out of order and can no longer be relied on and should be repaired.

But if dentists will be reckless with an instrument that is not made subject to their carelessness, what shall be said of one that seems to invite catastrophe? There is advertised, and on the market, an appliance, intended to take the place of the safety apparatus, that has a two-way cock, which needs only to be inadvertently turned wrong, when it as effectually seals up the safety-valve as though the end of an excavator were driven in it. The best of us are liable to moments of carelessness, and such an appliance is unfit to be committed to the care of most dentists.

It is the duty of every one who owns a vulcanizer to see that it is properly provided with a perfect safety-valve, no matter whether any other kind of blow off is used or not, and to carefully guard its integrity, remembering that it is the securest watch that can be placed over what may easily become one of the most destructive of engines. —*Ed., in Dental Practitioner and Aduertiser.*

"THE KICKER."

This is not a new dental engine. It is an ancient and perennial human being, and, doubtless, like the mosquito, is designed for some wise purpose once beyond human ken. When the first dental journal and college were proposed in Baltimore, he was not only discovered there, but in every State of the American Union, and there are lineal descendants from Maine to California, who still disbelieve in journalism and education. If the kicker had his way, instead of organized means of education, we should find stable-boys and jewelers jumping from the curry-comb and the bench into surgery at one bound, after, perhaps, six weeks' training. The kicker, as a rule, who condemns education because it is not equal to the very best that the older and more populous countries supply, is well aware that he, himself, is unqualified to improve it, and the impracticable suggestions he ever ventures to make only prove that he is more animated by jealously or ignorance than any idea of self-sacrifice or sincerity. The kicker has rarely, if ever, distinguished himself by self-sacrifice. He is as lavish in unreasonable criticisms as he is niggardly of his time or money. There may be a great hidden purpose in the creation of the kicker. But supposing kickers would only become as generous and loyal as they are carping; supposing they would kick with the best efforts leaders can make, instead of against them; what a difference it would make if they would lend their energies for development instead of for destruction, as builders instead of as iconoclasts. As a respected judge in Hamilton once said to the late Dr. Crittenden: "You dentists are good pullers. What a great body you'd be if you'd all pull together." Now, we believe we have discovered the object of the kicker's creation. He is designed to help, not to hinder. He is intended to make, not to mar. The only trouble is, he has been kicking the wrong way. If he kicks fair and straight, the object of his creation will be splendidly fulfilled. Of course, there may be abnormal creations, who kick just from pure "cussedness," and who are like the old Scotch elder, who, when asked why he sought to be elected on a committee, as he couldn't make a speech, replied, "Weel, I can object."

—*Ed., in Dominion Dental Journal.*

Items.

J. A. Huston, of Brownsville, Pa., sends us a third molar cemented to the under side of the second molar so completely that where one ends and the other begins can hardly be told. Of course the wisdom tooth could never have erupted. Such unions of two teeth are not very infrequent, but perhaps it is seldom that a wisdom tooth will thus remain for twenty years after the usual time for its eruption, and show no marks of decay, as in this instance.

The best matrix for gold is the Fletcher, invented a few years ago by Dr. Fletcher, of Portage, Wis. It is somewhat similar to the Brophy matrix, but better, because, instead of the band being made of one piece of metal, there are two, so that when the matrix is drawn tightly around the tooth it will adapt itself to the shape of the tooth, however bell-shaped it may be, thus permitting of good contour and good edges at the cervical margin.

—*A. W. McCandless, in American Association.*

A word about impression materials. I don't think it is ever necessary to break an impression into a thousand pieces. The more irregular the case, the more probability there is that the impression would break up, and the more necessity there is to take it in non-yielding material. It stands to reason that if the teeth, which stand in the arch irregularly, and the hard plaster will not come out, the wax will not; but if the plaster will fracture, you can afterward take the pieces and put them together, and you have an accurate model. *Dr. Ottolengui.*

Cocaine is a dangerous agent, so dangerous that in France the dentist is not considered sufficiently qualified to administer it. A number of deaths have occurred from its use quite recently. This may be partially due to its combination with other agents—the compound may be chemically changed. The uncertainty of this agent, even when used alone, makes it dangerous, but where symptoms of poisoning from a combination of agents arise, the operator will be at a loss to administer the proper antidote.

Instead of using a four per cent solution for injection, the tendency is to lower the per cent, and it is now quite the thing to use a two per cent solution. —*L. E. Custer in, American Asscciation.*

By the by, doctor, your ITEMS OF INTEREST is a great journal. I began taking it when it was an infant, at fifteen cents per year. It has been a light to guide me to success. Its value increases with its years, and I only regret it is not a weekly visitor.

W. H. Cornell, Hart, Mich.

DON'T BE TOO "INDEPENDENT."—If you are disposed to "flock by yourself" too much, you may find that your profession needs the encouragement of those in similar interests, and of educated people everywhere, even if they are somewhat "*commercial.*" The same advice will apply to the publication of dental journals.

—Western Dental Journal.

Should the supply of cocaine from the American shrub erythroxylon cocoa fall short, we shall be able to obtain some from India, the shrub having been cultivated for many years in the Madras Presidency. There seems, however, to be some doubt as to the uniformity in the standard of the India grown cocoa.

—British Journal.

In Stockholm, there is a scholarship for female dentists, instituted for the purpose of rendering assistance to women without means, who intend to study dentistry. It is known as the Free Wilhilmina Hierta's Scholarship, and has just been given to Fröken Elena Levin, who has qualified at the Gothenburg College for Dentistry. The use of such scholarships is very great, especially when some stipulation enforcing some original work. It is a matter to be regretted that our schools are so poorly off in this respect.

—British Journal.

DENTAL DOTS.—To drill or enlarge the hole in pivot crowns, I use a copper mandrel with corundum powder and glycerin.

A piece of rubber tubing slipped over a tooth is good to keep in a dressing when the shape of the cavity is such that it is not retensive, especially when the tooth is isolated or standing alone. I sometimes use a very thin piece of this tubing for putting over a zinc plastic filling to keep it dry for a day or two.

Buy a small curved drop-tube or pippet at the druggist's, put in a wick filled with alcohol, by removing the rubber bulb. Light with a match, and you have a very handy little flash-lamp, just as good as if you paid two dollars for the one that is on the market. Useful for setting crowns, repairing old gold fillings, and removing crowns that have been set with gutta-percha. Any dentist can make it and it only costs five cents.

—Dr. D. V. Beacock, Dominion Dental.

You ask, in "Monthly Gossip" for September, "Is weighted rubber more irritating to gums than ordinary rubber?"

I find that the *red* weighted rubber is irritating, but the *black* weighted rubber is not. I use black rubber entirely for lower denture; then patients and physicians cannot say it is red rubber that causes sore mouths. The black weighted rubber make a handsome plate. I have an idea that the metal conducts away some of the heat, making it less irritating than ordinary rubber.

S. R. Everett, Perth Amboy, N. J.

SUSPENDED.—Dr. A. H. Fuller, business manager of the *Archives of Dentistry*, announces the suspension of that publication for the ensuing year at least. We are sorry to hear it. Under the joint management of Drs. Fuller and Harper the *Archives* was giving evidence of "better things," and we only regret that their efforts were not appreciated more thoroughly. The "failure," if failure it can be called, reflects entirely on those in whose interest these gentlemen were unselfishly working. —*Western Dental Journal.*

So say we.—ED. ITEMS.

Recently a practicing dentist in Philadelphia called on me with his patient. He had in his hand the largest-sized rubber-dam clamp, and said his patient had that morning swallowed a clamp of that size, and it was fast in the esophagus, and what should he do? I told him to go to Dr. Cohen, about four doors above me. The day before I left the city I met Dr. Cohen in the street, and asked him what became of the patient. He said: "I took hold of the clamp with my forceps, but found I should so lacerate the esophagus it would do the patient irreparable injury. I therefore told him to go home and live on mashed boiled and roasted potatoes for two days. Yesterday the patient brought me the clamp, having passed it through the alimentary canal so encased in the potato that it was in the shape of a ball, and so firmly was the potato attached to the clamp it could scarcely be removed from it."

Dr. Peirce.

As an item for the consideration of those whose cheap sneer is the only compliment they have at their disposal for the dental colleges of the United States, I would propound the following question: Why is it that the best and most progressive students, after completing their course on this side, and having learned all their instructors were capable of imparting to them here, seek the halls of learning in America to secure that which they were unable to obtain here, where the best obtainable is supposed to be within easy reach?

And why is it, if American colleges are as superficial as they are said to be, their alumni hold the positions in the European capitals they do? I am constrained to believe we shall have to wait some time for a reply; the enforced silence of the press on these points clearly endorsing public opinion as to the merits of the respective institutions and their representatives.

With all the restrictions surrounding the practice of dentistry in Europe, it is to America that the public on this side must look for the best exponents of our science and art, and, speaking more specifically of England, the supply hardly equals the demand, as there seems to be a decrease of active practitioners, and the number of registered pupils insufficent to fill deserted ranks. —*International.*

The following case is fully reported in the *Brooklyn Medical Journal:* Dr. Cruikshank sued a Mr. Gordon for slander, in saying "He treated my child for malaria when it had another and entirely different disease," and "he nearly killed my child, and would have killed it if another doctor had not been called in." The jury rendered a verdict for the doctor for $1,600 damages, which was confirmed by each successive court, and finally by the Supreme Court of the State of New York. In addition to the specific charge, the slanderer repeatedly stated that the doctor was generally incompetent as a physician. The most important point reached by the decision was, that the physician need not prove the damages sustained, but, the slanderous language being uttered, the damage resulting therefrom may be assumed. —*Homeopathic News.*

[The character of a dentist is equally sacred.—ED. ITEMS.]

I cannot understand how we can go on moving teeth continuously without general disturbance to the individual. I am thoroughly of the view that all regulation should be made intermittingly. Time should be allowed for the individual to recover from the nervous strain and for the formation of tissue. I believe there is a liability of the destruction or strangulation of the pulp, and there is increased danger in the irritation of the pericementum. Slight irritation is absolutely necessary, in my opinion, for the reformation of bone which must take place after the moving of the tooth to replace that carried away by absorption. Now, if you advance too rapidly, an inflammation is aroused which may end in the destruction of the tooth. Therefore I do not approve, as a rule, of bands or ligatures moving with a continuous pressure.

Dr. Truman.

Monthly Gossip.

DR. WM. E. BLAKENEY.

SATISFIED MEN can only be found in coffins.

THE *Dental World* is a new venture in the journalistic field.

CRAMER, WEHMER, MICHELSON, and other eminent surgeons are using lysol, the new disinfectant, with marked success.

"ARGUMENT," says an exchange, "is often introduced to establish falsehood. It takes few words to make truth convincing."

A MAN GENERALLY LIES, in a variable degree, whether he speaks ill of a man, or complimentary.

AN EXCHANGE says that recent experiments by Michelson furnish the physiological proof that the sense of taste is actually possessed by the epiglottis.

DR. C. A. SOUTHWELL considers it unprofessional and ungentlemanly to estimate the cost of work performed by another dentist. This is the true professional spirit.

IT IS SAID MRS. ELIZABETH GRAY, 85 years old, widowof Judge Gray, of Osgood, Ind., has a third set of teeth just erupting.

A PAPER appears in the March issue of the *International* entitled "The Syrup of Iron Chloride," by Dr. G. W. Weld, which deserves a careful reading by dental and medical practitioners.

PROFESSIONAL DEVELOPMENT IN DENTISTRY is the title of the editorial leader in the *Cosmos* for March. It is a learned production, and the reader cannot but feel painfully impressed with its cost in mental agony. Dr. Kirk is at his best when not on stilts.

DR. TAFT asks if a thorough cleansing of all instruments with soap and water will not accomplish sterilization. There is no doubt about it, he thinks; and I believe this fact will be conceded just as soon as the bacilli craze subsides.

"THE MAN WHO EXPECTS to be a successful practitioner of dentistry," says Dr. Stockton, "should know the whole system, from the top of the head to the sole of the foot." It should be remembered that the doctor is not referring here to the solar system.

"IF THERE IS ANY ONE THING in the experience of the dentist that is especially annoying," says Dr. Haskell, "it is pertaining to the insertion of lower teeth, full or partial." How about the experience of the unfortunate victims who have to pay for and wear 'em? A little annoying too, eh, doctor?

THE CONCLUDING WORDS of a brainy speech published in the *Cosmos* are as follows: "Although I am not able to explain life, nor the mystery called death, and must confess my inability to tell the reasons why we ever were created, I do believe in God, the Father Almighty, Maker of Heaven and Earth, and rest my case on that—to be continued." Which doctrine I believe in, too, excepting the "to be continued" part of it.

A SPECIALTY, as defined by R. Grey, M.D., of East Orange, N. J., is, "any organ, or group of organs, may be said to be a proper field for a specialty, in the broad sense of the word, when it furnishes in itself, in pathological conditions, sufficient material to fully occupy the time of a man who devotes himself to a study of its diseases, and the application of remedies to their relief."

DR. D. M. SALATER believes that many diseases of the throat and ear are connected with the practice of dentistry. "I saw," he says, "a case of pharyngitis from the improper development of the wisdom teeth, and the patient was in the hands of an M. D. for fourteen years. Finally he went to a dentist, and when those teeth were brought out nicely and everything was clear, his condition was better, and he was cured within three weeks."

A SINGULAR CASE OF REFLEX ACTION is reported by Dr. Curtis, of Syracuse, N. Y. "A patient," he says, "was confined to his bed for several days with rheumatism involving one entire side of his body. The attack followed a severe toothache and the pain ceased with the relief of the affection of the tooth." This and similar cases show the great necessity of a knowledge on the part of the surgeon of the relations, near and remote, of the oral cavity.

IN SPEAKING OF MERCURY BICHLORIDE, Dr. Geo. S. Allen says: "I have used it more freely than is customary in the profession, and with much satisfaction. There is little doubt in my mind that it is one of the most powerful germicides we possess; that its use is not attended with any special dangers, and that most of the objections urged against it are largely fallacious and misleading, and due to a lack of knowledge as to its properties and combinations."

DR. J. Y. CRAWFORD, of Nashville, Tenn., is reported to have said that "it was impossible for a devitalized tooth to decay," also that "when a tooth has erupted through the gum it is as large as it ever will be," of which he is "sure," and that he "does not accept the conclusions of Dr. Miller in regard to the germ theory." And yet devitalized teeth do decay frequently, teeth that take their first peep from the gums do not increase in size.

WE SAW in a dentist office, the other day, a patient dismissed from the dental chair while having a tooth filled, with the rubber dam on the tooth, to give room to a lady who wished an estimate made of work for a future appointment. About twenty minutes was thus occupied before the first patient was again called to the chair. No dentist can thus disregard the rights of his patient, and not suffer for his indiscretion. He may not hear the words of denunciation, but he will feel a loss of patronage. It is an insult, and is sure to be resented.

THE EDITOR OF THE *International* is always logical in his professional deductions: After describing what he aptly terms the "mixed treatment" of pulp-canals by different operators, he says: "It is presumed all intelligent operators in dentistry will agree that, with our present knowledge of the germ theory, the important thing to do is to first render the canal aseptic. The second must be to remove all the evidences of putrefaction, and the last to fill it so that it shall absolutely be impervious to fluids both from within and without. That filling is the best that will accomplish this; and that filling is the worst which permits absorption of fluids, whether this be imperfectly packed gold or wood."

LYMAN F. BIGELOW, D.M.D., in an excellent paper read before the Harvard Odontological Society, his subject being the "Responsibilities of Dentists and Physicians," strikes the key-note of the matter in the following well-chosen words: "We are in a measure accountable for the future comfort of our patients, so far as comes within our province. It is perfectly easy to conceive of a case where, by a poor appreciation of existing conditions and poor judgment of the possibilities, we may make one's future full of unpleasantness, without the opportunity of ever making their condition as satisfactory as it might have been had we been better able to judge and advise."

DR. S. S. WALLIAN, of this city, in the *Medical News*, complains that the various samples of peroxide of hydrogen in the market vary greatly in their purity and efficacy. "Of five samples," he tested, "one gave a strength of eight and one-quarter volumes, another of thirteen and a half volumes, a third of seventeen volumes, a fourth of one and one-half volumes, and a fifth of twelve volumes. Some were distinctly acid in reaction, and showed a considerable liberation of gas, in the force with which the cork of the bottle was ejected." The doctor insists that "samples should be entirely neutral in reaction, should not readily deteriorate, and should have the strength claimed for them. Only one of the samples," he says, "answered these requirements."

Our Question Box.

WITH REPLIES FROM OUR BEST AUTHORITIES ON DENTISTRY.

[Address all questions for this department to DR. E. N. FRANCIS, Uvalde, Texas.]

What is the rough coat of lime or salts forming on rubber dentures while vulcanizing, and by what means can it be avoided?

Subscriber.

The only coating we have observed on plates after vulcanizing, is plaster. This can be avoided by coating all coming in contact with rubber, with collodion, silex, or tin foil.

L. A. B.—Your question is lengthy, and as it will be difficult to obtain practical answers from your description, we will request subscribers having had experience in similar cases to answer and give treatment.

E. E. V. V.—The cause of perfectly sound superior central incisor turning red with an appearance indicating the flow of blood on excavation, is one of those rare cases that often prove quite difficult of diagnosis. An examination generally reveals a dead pulp, and the red appearance is usually caused by decomposition of red blood globules.

A lad of seven has three lower permanent incisors filling space which the four should occupy. The fourth (right lateral) is coming inside of arch. Would you extract lateral or temporary cuspid, and why?

C. S. H.

Questions partially covering this case have appeared in ITEMS with answers. Your judgment must guide you in this matter. If the lateral incisor occupies a position favoring regulation, extract temporary cuspid. When permanent cuspid erupts, if crowded for room, extract first bicuspid and assist the cuspid to place. Being a boy it is supposed to make less difference, but in all cases the loss of a permanent incisor or cuspid is a deformity. If the incisor can not be drawn in perfect line with other teeth, wait till the cuspid is about to erupt and extract the lateral incisor. Nature often produces wonderful results in cases of this kind if allowed time. Some prefer to extract the first molar in place of first bicuspid, this gives opportunity for the construction of a regulating appliance for the purpose of moving the bicuspids and cuspid, and generally results in more experience than permanent success.

I practice in a Spanish town of 4,500 feet above sea level, and nervous temperament predominates. In my experience of three years, have had trouble devitalizing pulps. I have applied $\frac{1}{100}$ grain of arsenic alone, and in combination as many as eight times. All dentists here experience the same trouble. What is to be done, but resort to cold blooded murder?

Guatemala Cen. Am.

Our experience has been that in warm climates it is more difficult to produce inflammation, the blood being thinner than in cold climates where the blood is much thicker, and the doses given in our medical and dental text-books do not apply in all localities. In using arsenic for devitilizing pulps, we do not advise increased doses, but a longer time to produce given results.

Our text-books generally limit the dose to $\frac{1}{60}$ of a grain of arsenic, but as few dentists have access to scales weighing that amount accurately, the application of arsenic for devitilization of dental pulps becomes guess work. Many practitioners hold up their hands in holy horror, when a longer time than from three to twenty-four hours is advocated in the application of arsenic, and all remarks applying in this line will produce some criticism, but we give them for their worth.

As the $\frac{1}{60}$ of a grain was found difficult of approximation, we started with a small dose, and increased that till a two or three days' application would produce the required result, and repetition of application has been unnecessary for the past four years.

The time depends on the quality and thickness of dentine to be penetrated, and to some extent the temperament of patient; the penetration being greater in soft dentine.

Where a cavity is so that an application cannot be made without risk, we have drilled through the enamel in another part of the tooth, applied the arsenic, covered with oxyphosphate, and left seven days, testing the decayed portion of the tooth for the death of pulp. If, on the removal of dressing, the pulp is found sensitive, and inclined to bleed on the slightest provocation, we can often puncture or remove some portion without pain, and allow cavity to remain open from three to twelve days, finding at the expiration of that time—the pulp dead, if arsenic was properly applied. You claim to use $\frac{1}{100}$ of a grain, this is a full grain and endangers life. The failure of success sometimes depends on poor arsenic, but more often on a failure to protect the dressing from the secretions of the mouth. Cotton and varnish will not do

that for any length of time. Also, the arsenic should be an impalpable powder, and mixed with tannin and carbolic acid.

We have been successful in every application by the use of oxyphosphate as a covering.

A correspondent asks:

"Should a dentist, against his judgment, extract a tooth because a patient requests it?"

Let us answer this question by asking another:

Should a surgeon, against his judgment, cut a man's leg off because he requests it?

Most assuredly the dentist, as well as the physician, is held by law responsible for his professional acts, and must, therefore, use his own judgment, and not be guided by the wishes of his patient.

If this was more generally our standard, less teeth would be extracted and more preserved for permanent use.

"But people will have their own way; if I do not extract their teeth, some other dentist will, and I may as well have their money as he."

This is the way some rumsellers argue; but it is no defence. Because another is willing to do wrong, is no reason you should. Besides, some of the best and most valuable and permanent patients we ever had were those whose teeth we had saved against their will. The longer we were in practice the less teeth we extracted.

A frequent question with us all should be, Are we making the world better? If what we are and what we do are not improving the world, it is a sad thought; but a consciousness that we are, is an inspiration.

We mean by this no eutopian character or work. We are not after a man too sanctimonious to touch the world with his fingertips lest he be defiled. We would rather exalt the man who fills well the nitch in which God has placed him, however obscure, insignificant and humble that may be. Though he may not be a great man, or a rich man, or a man honored by men, he will be a *man*,—good, useful, and perfect in his sphere. That man moves the world. Our great need is such men and women,—clean, discreet, thoughtful, aggressive, daring, self-sacrificing, cheerful, winning, conquering.

To true a corundum wheel that is unevenly worn on the side, heat it, and press on glass. Of course this will true but one side. To make a corundum wheel cut as well as when new, soak for a short time in alcohol.

SCREWS *vs.* RUBBER.

I had one of those very trying cases this summer where a bicuspid erupted without the arch. There was room enough for its reduction by a slight change of the other teeth, and after a space was made it was merely required to have an instrument to bring it into place. Nature may have accomplished this unassisted, but it had remained in that crowded position for a year and a half, and, therefore, it seemed advisable to force it into position. I made a plate, putting two hooks on it, and threw an elastic band around the tooth, and brought it into position in one week. Now, what was the harm in taking my elastic band, instead of working with a screw? Every one who makes a practice of using springs or screws instead of rubber will admit, when he looks over his cases, that it takes, it may be, five months to do that which can be done by continuous pressure in half the time. What may be lost by possible danger to the tooth by moving it rapidly is more than counterbalanced by the comfort of the patient, and in causing the appliance to be worn not more than half the usual time. I think the nerves of the patient are to be considered as much as anything else. Where you can get two molars with anything like a knuckle on them, make a rubber wedge and fit that clasp to go to that point and keep them wedged till the appliance is placed, and as soon as it is pressed down you have a point that prevents that clasp from riding up. You can always force it up, because half-round wire is always wedge-shaped, and it won't slip. *Dr. Ottolengui.*

Notices.

The Central Dental Association, of New Jersey, are a wide-awake body. They always have good attendance and a lively program. With the exception of the smoking nuisance they are to be commended.

The thirtieth annual meeting of the Iowa Dental Society will be held at Ottumwa, May 3d, 4th, 5th and 6th, 1892. All are cordially invited to attend. *G. W. Miller, Secretary.*
Des Moines, Iowa.

"Mouth Breathing not the Cause of Contracted Jaws and High Vaults," is the title of a well-digested essay by Dr. Eugene S. Talbot, Chicago. It shows close observation and much experience.

Catching's Compendium of Practical Dentistry for 1891 is a fine résumé of some of the best things said in the dental periodicals

of the year. It is well worth the $2.60 charged for it. We advise dentists to add this and the previous volume to their library.

"Harvey Rowell's Hard Soldering," published by Spon & Co., 12 Cortlandt, New York, is the title of a neat, compact and useful little manual of instruction, that a dentist will very often find useful. Some of its tables are frequently of use. For instance, regarding the properties of medals, we have:

Table of the specific gravity of metals at 60° Fahrenheit, or 15.5° Centigrade:

Aluminum	2.60	Bismuth	9.90
Zinc	7.10	Silver	10.50
Tin	7.29	Lead	11.45
Iron	7.79	Gold	19.50
Nickle	8.80	Platinum	21.50
Copper	8 96		

The figures show the number of cubic inches of water necessary to balance one cubic inch of the respective metals.

Tenacity of metals is ascertained by observing the weights required to break wires drawn through the same orifice. They stand in the following ratio:

Iron	269	Gold	68
Copper	157	Tin	24
Platinum	124	Zinc	12
Silver	85		

The different metals become fusible, or melt, according to Prof. Daniel's pyrometer, at the following degrees of temperature:

METAL.	FAHRENHEIT.	CENTIGRADE.
Tin	442	228
Bismuth	497	258
Lead	617	325
Zinc	773	412
Silver	1,873	1,023
Copper	1,996	1,091
Gold	2,016	1,102
Iron, cast	2,786	1,530

Nickle and Iron, wrought, highest heat of forge.
Platinum, not fusible in ordinary furnaces.

Alloys of metals vary from the mean melting point of the metals of which they are composed. They usually melt at a lower degree of temperature than the mean, and sometimes at a lower degree than either of the metals of which they are composed; as, for intance, tin solder, composed of two parts tin and one of lead, melts at about 360° F. A hard solder, composed of two-thirds silver and one-third spring brass, melts easier than either the silver or the brass.

For Our Patients.

THE THINNING OF THE THATCH.

O, the autumn leaves are falling, and the days are closing in,
And the breeze is growing chilly, and my hair is getting thin!
I've a comfortable income—and my age is thirty-three;
But my thatch is thinning quickly—yes, as quickly as can be!

I was once a merry urchin—curly-headed I was called,
And I laughed at good old people when I saw them going bald;
But it's not a proper subject to be lightly joked about,
For it's dreadful to discover that your roof is wearing out!

I remember asking uncle—in my innocent surprise—
How he liked his head made use of as a skating-rink by flies;
But although their dread intrusion I shall manfully resist,
I'm afraid they'll soon have got another rink upon their list.

When invited to a party I'm invariably late,
For I waste the time in efforts to conceal my peeping pate—
Though I coax my hair across it—though I brush away for weeks,
Yet I can't prevent it parting and dividing into streaks!

I have tried a hair-restorer, and I've rubbed my head with rum,
But the thatch keeps getting thinner, and the new hair doesn't come—
So I gaze into the mirror with a gloomy vacant stare,
For the circle's getting wider of that open space up there!

People tell me that my spirits I must not allow to fall,
And that coming generations won't have any hair at all—
Well—they'll never know an anguish that can adequately match
With the pangs of watching day by day the thinning of your thatch!

—*Punch.*

DOUBTLESS.—"That's such a big tooth, too. I should think you would hate to lose it."

"Yes. It will cost me a pang to part with it."—*Chicago Tribune.*

—"Does your tooth ache yet? If 'twere mine, dear, I'd have it out at once." "If 'twere yours! So would I."

—*Harper's Young People.*

IN BAD SHAPE.—Visitor to sick woman: "How are you feeling this morning, Mrs. O'Toolihan?"

Mrs. O'Toolihan: "Och, leddy, it is that bad oi am wid a complication av troubles—rheumatism, lumbago and all; and it was only this marnin' that the doctor, Hiven rist his sowl, said there was decided symptoms of convalescence. —*Bazaar.*

TALK AMONG THE STREET URCHINS.—During the last few weeks dialogues something like this have been frequent between boys.

"How many yer gointer?"

"Many what?"

"Sunday-schools."

"Four."

"What be ther?"

"Der Free Bapst, Nited Methdst, First Sperterian and St. John's Chaplain."

"I can beatyer."

"How many you got?"

"Five."

"Gibemtome."

"Ther Congational, Loothran, Free Methdst, some kind er Reformers, wid two missions dat I skip into in a hurry."

"Dat's all right, but yer can't eat any mor'n me, nor yer can't carry any more away. Does yer see?" —*Exchange.*

AMERICAN WORKSHOPS.

An interesting paper on some of the leading American workshops was lately read before the members of the Manchester Association of Engineers by Mr. Hans. Renold. After expressing his opinion that the English people did not sufficiently look about them or try to understand what other nations were doing, Mr. Renold stated that he had visited that portion of America known as New England, and the works he had inspected were among the best in the United States. Among the many special features he had noticed he mentioned that in a Boston establishment where milling machine cutters are made he had found that $5 spent in wages produced from $150 to $200 worth of goods, the cutters being made at the rate of about sixty-four per hour by about a dozen men. Another noticeable feature is the exceptional care taken in storing tools in American workshops. These, in fact, are treated as if they were worth their weight in gold. They are stored in safes much in the same manner as we in England store our money. He was, however, impressed by the fact that the mere understanding of the method of American working would not enable them to do likewise in England, because the American workmen have gone through a special training, and a similar training would be necessary to enable English workmen to adapt themselves to American machines. One very noticeable feature in American

engineering shops, which he visited, is that all the machine men and turners are seated on blocks or stools at their machines, and the question naturally arose in his mind, what would English engineers say if such a practice were adopted in their shops. In other ways he was also struck by the special attention devoted to the comfort of the workmen, and he was much impressed by the healthy condition of the emery polishing shops as compared with similar shops in this country. In England these shops in most cases are simply deathtraps to the workmen, and he urged that the superior method of ventilation carried out in the States should be adopted in this country, by introducing a fan to each wheel to take away the particles, etc., which are so injurious. One very special feature in the United States is that works are devoted to the manufacture of one particular article to an almost inconceivable extent, and that heavy machine tools, complete and ready to be dispatched, are kept in stock in large numbers. American enterprise is not hampered as it too frequently is in England by want of capital; while in England we are ready to put our savings in South American railways or fictitious gold mines, we are very chary about investing capital which would assist an engineer in bringing out an honest improvement; in America, on the other hand, it is a common practice among the best firms to invest their savings over and over again in their works, which are thus kept in a high state of perfection.

—*Scientific American.*

"I like to go there because everything always looks so nice, and he is always so pleasant, and so neat and clean."

So said a young lady in compliment to her dentist. Few compliments could be more drawing.

"Oh, I am so disgusted," she continued, "to see a slovenly, tobacco-scented dentist. I can't bear to have him touch me. And a slipshod dentist will do slipshod work."

"There are some exceptions," I ventured to suggest.

"But we are not governed by exceptions. If a dentist or a physician does not keep up with the demands of good society, by being a gentleman in every sense, he is not likely to keep up with the demands and improvements of his profession."

"It is generally so," we replied. Reader, what would you have replied?

Some slovenly, ill-scented dentists do good work, but to what a disadvantage they are.

Current Notes.

Mayer has calculated that, if the motion of the earth was suddenly arrested, the temperature produced would be sufficient to melt, and even to volatilize it.

Women dentists have proved so popular in Sweden that a scholarship has been founded for the purpose of rendering to women without means, assistance in the study of dentistry. They may yet get pull enough to draw a supervising principalship.

Secretary Foster, who is across the Atlantic "for his health" (not to speak of an international silver conference), is said to have habitually smoked an average of twelve cigars a day for the past twenty-five years; a regular treasury draft, so to speak. His physician says he must stop smoking, or ——

Dr. C. M. Wright, in *Cosmos*, says: "I do not mind, however, expressing myself forcibly against mere writers,—writers who have not even learned the art of making their productions interesting. But when a practical man, a *teacher*, rises to explain, I take off my hat with respect and listen attentively."

Homeopathic principles have been applied to anesthetics in a curious way. Cocaine has been used as a local anesthetic for some time. A German physician experimenting to find out how small a dose would serve the purpose, accidentally discovered that water, pure and simple, if injected under the skin, would make the part insensible to pain for some minutes, during which an operation could be performed.

LIFE INSURANCE.—A respected dentist wishes to know what responsible life insurance company I can refer to where "a policy of $5,000 can be had for $50 a year, or perhaps half of that," as stated in a recent editorial.

We are not championing any company, but we supposed it was generally known that there are several companies, viz.: the Chosen Friends, Iron Hall, and others of that class, that insured at the average age of 35 for about the latter sum, if accidents and sick benefits are not included. The purely *life* insurance company I referred to at the former figure—$50 for $5,000—is the American Temperance Life Insurance Association, 187 Broadway, New York.

Dr. G. Lenox Curtis has concluded to confine himself to the surgical treatment of diseases and deformities of the mouth, face and neck. His thorough preparation for this specialty by study in the colleges of this country and Europe, and his practice for some time in Syracuse, give him confidence to settle in New York for the benefit of patients throughout the country. He invites dentists to refer or bring to him patients. He is also connected with the Post-Graduate Medical School and Hospital, 226 E. 20th street.

THE COLOR OF NATIVE GOLD VARIES, THOUGH PURE.—The color of native gold varies, though it is nearly always found in a pure state, not mixed with other metals. In visiting the U. S. Mint some time since, we were astonished to see how great this difference is, from a light brass to a copper color. The gold found in the Ural mountains is the reddest of all in its natural state; Australian gold is redder than that of California, while gold obtained from the placers is redder than that obtained from quartz. What causes these different colors is one of the mysteries of metallurgy.

Much fruit, as we get it in the market, has undergone processes of preparation which unfit it for use with many people. J. Milner Fothergill says that a great amount of fruit that would have been of inestimable value in our dietary, has been spoiled by incorporating with it in the cooking process a quantity of cane sugar. Many stomachs can take mildly acid fruits and be benefited by them, but when taken along with sugar they occasion great distress. One or two raw apples, taken with a meal and thoroughly masticated, will often be found a great aid to the stomach in disposing of that meal.

In ordinary business and in the professions, the value of work is estimated by the amount of brains mixed with it. Its value is still farther advanced by its variety—by being something that but few can do. In our profession, it is safe to say not more than a tenth are skilful. And how many there are who have brains to spare to mix with their work; or, at least, who scatter so much of it among their follies, extravagancies and self-indulgences, they have little left for their work. And they seem to have but little regret that their work is poor, because of this. Their work is the only thing they would like to avoid, and they give it as little time and thought as possible.

And then they grumble that they are not appreciated?

Editorial.

We produce in this issue a portrait of a representative South American dentist, Dr. Mortimer Ricardo, of Caracas, United States of Venezuela.

The doctor was born on the Island of Jamaica, in 1849, but is decidedly American in his energy, ability, and general characteristics, continuing in constant touch with the rapid advancement of his profession, during his thirty years practice in Caracas, by frequent visits to this country.

Of four facts the doctor is justly proud, viz.: As the first dentist to introduce in that country vulcanite base, celluloid base, "building up" process with gold, and the first to mount a porcelain crown.

In the National Exhibit, held at Caracas, in 1877, the doctor fitted up a model dental office, at an expense of $5,000, and publicly operated in these lines of work. As a reward of merit, he not only received medals and diplomas, but was publicly decorated with the Order of Bolivar, a distinction, at that time, enjoyed only by statesmen, and eminent men of letters.

The doctor represented the Venezuelan Governor at the Centennial Exhibition, of 1876, and later at the New Orleans Exhibition; he, likewise, aspires to be their commissioner at Chicago, in 1893, and will probably be appointed.

During his brief sojourns in this country, he became intimate with many of our leading dentists, among them the late Dr. Atkinson, Dr. Frank Abbot, Dr. Perry, the late Samuel S. White, and others; and also relates, with pride, how he was invited by President Cleveland to join his family in their morning horseback rides, which he accepted, and occupied the position of cavalier to the President's sister.

Should the doctor secure the appointment as special commissioner to Chicago, we can assure such of our readers, who may have the pleasure to meet him, a cordial reception at his hands.

ENTHUSIASM.

This does not mean zeal without knowledge, the fire of imagination without substance, a fight with fantoms instead of grappling with the realities of life. Enthusiasm is enterprise set on fire, the arousement of every faculty, the engagement of every power, the concentration of every resource, for the accomplishment of a definite, practical, important object.

Few men succeed without enthusiasm. None who are not enthusiasts know the thrill, the delight, the ecstasy of a faith unwavering in future triumphs, a vision that makes a reality of those future triumphs, an exalted sensation that triumphs now in triumphs yet to come.

Plodders are all right. They will succeed, if they persevere. Yet I pity them. They are servants out in the cold, burdened with their daily duties. The enthusiasts are sons enjoying the delights of the mansion. They have their work, but it is a pleasure. Even their severe tasks of study, research and labor are an intense pleasure. The drudgeries of the plodder are done because they are duties; the enthusiast has no duties, every thing is his delight.

The enthusiast is more than a son; he is a son set free with his new clothes on, his pockets full of money, and the whole world before him for his possession. The grave question now is, has he brains as well as spirits, knowledge as well as zeal, wisdom and prudence and skill? for he will soon learn that life is not a mere holiday.

With all his faults, give me the enthusiast bounding with his possibilities, brimful of self confidence, dancing in the delight of what is to be. If I can whisper in his ear, though it may sober him a little; if I can turn a little of his overflowing spirits on to foundation work; if I can confine his enthusiasm into a definite channel, I'll risk his future. And though that future loses a little of its halo, and brings him down to sensible things and sensible ways, the knowledge thus gained will only temper and enrich his zeal, bring him into the possession of substantial things, and give him dignity, honor and definite place and power.

DENTISTRY IN ENGLAND.

A gentleman from England advertised in New York for a situation as an assistant in a dental office. A dentist in want of help went to see him, when something like the following colloquy ensued:

"What can you do?"

"Oh, the various duties of a dental office. I have had the experience of several years; but somehow I got the notion I'd rather live in America."

"Are you proficient in gold filling, gold crowns, bridge-work, etc."

"Oh, no; we do not do such things in an ordinary office in England. Well, there is some gold fillings done; but the principal work is amalgam and other plastics, rubber work and extracting; I am not good at filling with gold, I have done a little at it, but I have not good success at that."

"Are you accustomed to treating exposed pulps, alveolar abscesses, and work of that sort?"

"Oh, no; all that is surgery; only a few undertake such things; I am only a dentist, not a surgeon."

"How about administering anesthetics, chloroform, ether and gas?"

"We have specialists for them, ordinary dentists don't use them."

We do not believe this fairly represents the status of English dentistry. Though from many sources, we are confident that American dentistry is far in advance of that in England and on the continent. Some poor American dentists go to England, and they are deservingly snubbed, and have made it the more difficult latterly for even good American dentists to get a foothold there. But good American dentists who are allowed to practice are doing well. Even native dentists of skill who have graduated in good American colleges are esteemed the more highly for their American training. Yet there is a jealousy among English dentists that makes every step of an American dentist to get a foothold in England difficult.

THE FATHERS OF OUR PROFESSION.

Let us not ignore the fathers of our profession. They worked under great disadvantages, yet many became shining lights. When we were groping our way in darkness they lent us their light, and showed us the way to success. We rejoiced in their light till we too became illuminated and went forth to attract and conquer. Others are silently passing over the hill toward the setting sun. As we mark their stately steps, the glow of their evening sky brightens our faces and gives us inspiration. We walk in the highway they made for us; let us gratefully acknowledge their services and still further improve and beautify the way, and leave it to our successors a kingly way, dignified and honorable.

As one and another of our bright lights pass away, we are too apt to believe there are fewer left by their departure. There is a bright side to this picture. Others are coming with torches brightly burning, brighter than those of their predecessors. They are moving up and making the way beautiful. Give them room; give them cheer; while we very properly sing requiems to our honored dead, let us not refuse merited encomiums to the noble living. We have still leaders who are giants. They are the world's grand men. When we lay them, one by one, into the cold grave, we will acknowledge their merits; let us acknowledge them now, while they live and can hear it, bow to their wisdom, learn of their skill, sit at their feet as humble disciples, and let them see we appreciate them.

As we have listened to important debates in our associations, we have sometimes been disgusted that the most blandent and egotistic ignoramuses are the most forward and assuming; and their assumption of the time and conduct of business are often allowed; while the men who were able to teach and direct were left in the background.

Our best teachers would be better if we gave them greater evidence of our appreciation. Even when such are specially invited to our gatherings, they are used more as gold-headed canes to adorn the meetings than as illuminators; and instead of generously recompensing them, the officers think they are doing wonders if they pay their bare expenses.

And we have in the profession young men of tact, skill, learning and enterprise who are making herculean efforts to improve the profession and themselves. They are the peers of any other calling. Let us recognize their worth and encourage their efforts.

To name and praise men who have struggled to the front and who are our living leaders, is called flattery; when they are gone the same words are called eulogy. Instead of merited praise spoiling such men it increases their endeavors and usefulness, by giving them greater self-confidence. Even we small, obscure, ordinary mortals grow faster and better by a little praise when we do well.

THE CERVICAL BORDER.

The cervical border is where there is more frequently defect in filling a tooth. It is more out of sight, more difficult to get at, and the more sensitive and delicate part of the tooth, and where decay of the tooth, and disintegration of the filling is sure to be exhibited, if left at all defective. Should not this, therefore, be the part which should receive our greatest care, skill, and patient manipulation in preparing and filling?

Many years since we were asked to examine a beautiful contour gold filling, in a first right lower bicuspid. It seemed perfect in every feature, but—a probe easily penetrated the filling next to the neck of the tooth, and the pulp was exposed, though the work had been recently done. We should have spoken out in very decided terms, and condemned the dentist who filled it, if it had not been for one circumstance—it was our own filling! What a difference this makes? Of course we were mortified, and the more chagrined because we found no logs near by with which to build a bulwark of excuses. There we stood, unprotected from our bad work, in a cold sweat, wondering where we should hide ourselves. Our position was all the more embarrassing because this was one of our best and most particular patients, and this was the second blunder we had made with that tooth. Six months previously to our filling it, she had called to have that tooth examined; and though she was sure it was seriously defective, we had assured her it was perfectly

sound; and when, after the six months, she again came, I could find no defect till she persisted in a more thorough examination. Then with a stronger instrument I broke through the thin shell that hid the trouble, and found a deep-seated decay that had almost exposed the pulp. With all this warning I had made a poor filling in a poorly prepared cavity. Gold had no business there any how; nor any other metal, without previous treatment. I was finally obliged to extract the tooth. This was a life long lesson to me.

ABSCESS *VS.* ULCER.

A dental writer confounds an alveolar abscess with an ulcer, and speaks of the abscess sometimes being on the side of the root of a tooth, instead of at the apex. An alveolar abscess is never found on the side of a root, except as it may spread its fibers from the apex; and an ulcer is never found at the apex, except when it is the result of the breaking down of the abscess, being thus changed from an abscess to an ulcer. An abscess has a sac, an ulcer none. An abscess involves none of the surrounding tissues, except absorption from pressure and its tendency to form a fistulous opening to some outside discharging surface; ulceration tends to destroy everything it touches. An abscess voids pus through a self-formed tube, and is confined by a boundary of tissue; an ulcer eats and spreads its way through the surrounding parts as an acrimonious, dissolving fluid, attacking bone and flesh, and even the cement and dentine of the root. An abscess is a comparatively healthy formation, and may exist harmlessly for years; an ulceration is continually knawing on the root or the alveolus to which it may be attached, till it is destroyed. An abscess never comes on a root till its pulp is dead; an ulcer may eat into its side till it reaches the pulp and kills it. In probing from the fistulous opening of an abscess, we follow a well-marked tube of dense tissue to a strong sac fastened to the end of the root; in probing the opening of a deep-seated ulcer, we are led through soft, broken-down tissues to the jagged, harsh or broken-down bony substance, which is without specific boundary or definite form.